

Record

901-1122

Mosquitoes page 189, 199. (1902)

Harrison G. Dyar
U. S. Natl. Museum
Washington, D. C.

Apr 30 1900.
July 9 1902.

901

Two Arctians from Mr. D. Brainerd, Montreal
said to be Arctia virguncula. Apr 30 1900.

Hd. 3mm. Slightly bilobed, flattened before, 2 sulci
impressed; shining black, epistoma ochraceous
below. Body arctiiform, normal, velvety
black, abd feet, spiracles and hairs from
lower part of v and vi brick red. Ant i $\frac{2}{3}$ or
more the size of ii, both with shining bases.
iv large. Basal joint of antenna large.
Hair stiff, black d, sparsely but distinctly
mottled, somewhat longer ones at ends
esp. post. The feet black. Others do. but
sr have 2 feet dark brown rather than red.
Hd looks wholly black.

Spinning May 10 - other died May 14

Chry June 13 Cat no 15948

Arctia virgo ♀

Egg conical, base flat, smooth shining pale
yellow. Laid loose. D. 8 H. 9 mm. Very minutely
irregular hexagonally reticulate, obscurely an-
shaped.

Abbotana crenatana as

Seems XVII

902

Looper eggs Anacostia D.C. on chestnut twig Apr 30 1900. A large mass 300± laid closely on twig all erect on the smaller end like *Chrysomelidae* but naked. Spherical flattened on two sides and a little concave the larger end distinct flattened truncate, side view slightly wedge shaped. Ribs very faint, not showing as lines but as slight rounded hexagonal flattening except just around the rim of the apical truncation where they form a row of slight raised ridges composed of the raised sides of one series of cells rather broad and diffuse, and as numerous when there are over small rather distinct sets. $7 \times .55 \times .45$ mm.

all dark red shining, uniform when found. Hatchlings May 7 Hd 3 mm, rounded flattened before minute joints free. Black, epistoma ^{black} pale whitish. Body slender but not greatly elongated flattens d-v. Body black d-v bearing a white lat stripe 2 and pl which are pale with a reddish central and lateral line. On back like dorsum obscure and feet reddish base of 10 darker than 13. Setae dark with small granular tips rather stout from moderate tubercles pale than ground color but not contrasting; i.e. ii small & thin, iii & iv ii but slightly but no subsp. 4 mm ch. 2 detailed white side stripe covers by plate of 13, not of 10, clasp 1 feet pale. Segs fine not very regularly annulate two feet pale, darker shaded outwardly. At white oak ate white greenish, dark with some pale brown, but not changed.

Shed May 12 Hd 6. Rounded lobed & moderate sunken. Lobe full & black, epistoma & antennae white smooth pale. Head moderate somewhat arched, smooth, scarcely annulate cutting slaty black, on the claspers of abd feet pale yellowish. Tubercles small dark, setae rather distinct black, short. Skin not shiny except slightly in folds. Setae shiny olivaceous slaty black; no marks.

Shed May 15 Hd 1.2 rounded and slightly lobed apex free from 2, 4 large, broad moderately high, slaty black. Labrum & labium white slight white streaks on the sides above ocelli. Red rather robust, not greatly elongated minute? subannulate not feet, or segs, smooth, the tubercles slightly elevated esp 12 feet. Anal pl large

later joint color alike all over, slightly ochraceous but gray the markings then same the dark patches more undulating. Shed J May 30. Shed 2. J of a day also out April 17 1901 cat no 16088

4 mm at tip anal prolegs thick. anal feet perfectly laterally. all brownish black, not shiny no distinct marks. Feet 10 outward pale, ventral a trace lighter than dorsum, obscurely longitudinally streaked; iv & v obscure white ringed. Setae short black. The feet black equal, appressed, later the color is more black centrally, duller at the ends. The tubercles a little elevated and bearing esp a sd process & 3 which form a row on the distinct dorsal collar.

Shed May 17 Hd 2.2 Hd rounded, slightly lobed flattened before free from 2, lobes full, $\Delta \frac{1}{2}$ to vertex, the par & piece obscure. Slaty black, large part of 2 mounted pale, labrum and sides of lobes streaked, epistoma whitish, anal. Antennae short, brown. Body cylindrical thick rather robust uniform, 3 and 4 strongly collared with a double lat. finger process bearing ii & iv & v. A rounded process bearing ii & 8. Dorsal tubercles all slightly elevated. Anal prolegs short, projecting. Slaty black d, a little brown shading to shaded ochraceous ventrally, mottled & streaked with black. Collar 3 fleshy colored before; process orange spotted; orange dots on ii, iv & v and a larger one ventrally the finger process of 8. Feet of 10 highly shaded outwardly. A black blotch on 8 s-v. The anal feet dark. Setae small except on anal plate & with hair tubercle black. Bands hd & 2 drawn going on & at 3 feet & 4 crossing the three making the ant. end thick and dark like.

Shed May 22 Hd 3.2 Hd shifted so that back of acropod covered by 2 labrum quadrate emarginate, epistoma broad, aa. Purplish gray thickly mottled on a whitish ground, somewhat spirally on face, lobes, eye black, last and joint very reddish. Body as before a little intensified. 2 and 3 ant. almost rising to high collar elevated on 3 angled sd by the double finger processes. Dorsum descending to 5, then cylindrical & smooth (except for the small granular tubercles, ii mounted to 12 but ii 8 very large a high club shaped papilla, ii 12 also prominent but less so. Anal pl moved behind, by shield not produced foot, prolegs thick moderate. Purplish brown like head, densely mottled, shaded paler, outwardly feet 10 esp. so. Collar black, an orange patch before it, mottled, finger processes tipped red. i-v bright orange cushions with black hair tubercles, vi-viii black all a little elevated. Spiracles white black marked. Setae short black distinct. 2 below spiracles slightly more grayish than dorsum. Dorsum shaded base of 7, 8, 9, 10, 11, 12, on papilla 8.

903

Homopterid? like *Maak* on white oak *Amacrostia*
D.B. April 30 1900. [Perhaps = that oak thing
given just off. *Reclupus* BB]

Hd 1.5 bilobed, free, flattened obliquely before, $\Delta \frac{1}{2}$.
white, heavily black marked. a stripe from middle
 Δ to apex, one anterior-apex, a short one before
antenna to center lobe, all joined by strong
distinct reticulate line; a vertical bar in Δ
suture black lined; ant white & black ringed
setae rather stiff; short, pale. Body strongly
flattened; feet 7-8 small, 9-10, 13 large,
spreading. Dark gray, a grayish white
lined with black. in shields. D. area
pale, Δ by widened on post $\frac{1}{3}$ of each seg. and
less broadly so on ant $\frac{1}{3}$, cut by a d. black
linear streak and brown mottled; sd band
narrow black, as wide as d., covering i & ii, crossed by
pale Δ 5 except its black edges, darkly mottled;
lat. area pale, equal in width & marked like d.,
terminal, but the edges subparallel, cut by
a central streak; supra stig. like sd, covering
iii, iv and (in its lower edge) the spiracle; s-v like
d. & lat., its dividing line just crossing v, vi on
its lower limit a dark line. Below the venter
suddenly white; feet gray. ii large, ochraceous
tinged esp on 12-13, often with a light area
next iv. Setae stiff short black d., pale s-v.
iv at middle & above spiracle except on ii.

[Shed May] Hd. 2.6 gray with whitish sub-seg. with
irregular concentric lines, a black line at apex &
para Δ suture strong, ant a broad curved spon. tooth
side to center of face & lobe, an irregular curved
band from apex behind, across side to base cell
where of a disconnected mottles, subreticulate
an upright dash in Δ and antennae black.

Body rather flat ventrally, feet 7-8 smaller
than the rest, s-v white. No. present, 4 & 5
short thick rods for seg. tubercles large,
elevated, ochraceous, tinged whitish at apex, ii sp.
large, s-v ones not marked. Marks essentially
as before, a little more uniform mottles, back like
(Dead May 17)

904

On "moss" from Maine with
 many flowers. Spins a silken tube in the moss.
 Hd rounded, higher than wide, scarcely bilobed,
 epistoma pale, rest shining black. Body
 reddish with faint crinkled whitish sd
 and lat (iii) lines, 6th large blackest.
 horn black; anal fl and a conjugal patch
 13 and also black. Tubercles none, rather
 large, evident blackish. i, ii in line, iv
 & closely approximate, in line, vii also dark
 lat i b, ii a or i b, iv & v on thorax. Thor. feet
 blackish-brown. Clypeal, normal, 3-annulate
 setae moderate dusky. Feet rather slender,
 alulae 7-10, 13.

7/4/00

905 = 760

XIX

Cat 15879 DC May 23 1900

Egg by ♀ Evis

Laid perfectly loose, rolling around in tumbler.
 Roundedly elliptical, one diameter less than the
 other but without flattened areas, slightly more
 sharply rounded at the micropylar end, about
 15 longitudinal, strongly prominent ribs with fine
 parallel cross striae, slightly raised both across
 ribs and in interspaces. Ends confusedly reticulate
 the ribs abruptly ending at the edge of the micropylar
 end, becoming merged in the ret. at the other. 53 x 4 x 35
 horn pale green, almost white, not shiny [Infertile]

Senilis enucleata (no black)

906

Arctia in grass D.B. May 27 1900. Larva
 like *Estigmene acrea*. Hd black, epistoma white
 a broad quadrate pale space over m. sutures
 and apex clypeus. W. $3 \pm$ mm. Body black shading
 to dull gray s.v. Feet brownish red, a
 faint narrow whitish d. line, distinct on 2-4
 i & ii black, i over 2 size of ii, ii with a broad shiny
 base, iii pale yellow, iv orange tinted v & vi red
 brown, all with black hair tubercles. On thorax
 all the warts pale, cth representative of 4 warts
 in 2 rows. Warts of 13 also all pale the
 large sd are colored like iii. Hair bristly, black
 d, brown-red 2-4 and s.v. (iv-vi) 2-13. Spin-
 acles pale orange, black rimmed. Both i and
 ii, esp ant, are partly pale yellow under lens
 but the bases of ii are shining blue-black.
 Anal flap dark with small pale warts.
 On 3-4 the warts above stig, i & ii the large; ii b
 not seen, but iii a distinct, though small, many
 branched wart. (Spun in June & did not pupate soon)
 Ant Sept 11 1900. Cal. W. 16069
Arctia intermedia Sts

907

Stage I Acronycta on alder, Rock Creek D.B. May 31 1900
Hd squarish, lobes angled, white mouth brown, all-
black, setae long coarse black 10; wd 4 mm
Tha i+it, ii a, ii+small, iv, vi, full 2 black, ii a gray
abd i-v & vii, iv stig above upper corner, i-iii black rest
white, all white on 11. Body cylindrical, brown,
tubercle large angular elevated, single haired,
primary, 11 weak. Translucent greenish from food,
tubercle white. Hair subspinulose, tapering, 12
a little enlarged; fat equal. D hair curve forward.

Stage II June 3 Hd 6 squarish lobed, white, a tiny black dot on
face of lobe. Body translucent whitish, food green, 13 black
from face. Warts large but diffused and not distinct
circles. Hair numerous long, white, mixed
with a few black ones dorsally. iii & iv contiguous. 10
distinct 20 hairs.

Stage III June 7 Hd lobate, Δ, 4 patch in d. suture & an ellipse
on each lobe distinct black. w. 9 mm Body white. 11 cut
iii 12 large & prominent warts circulate. Hair white & 2
2d, square black d. tufts single on 5, 7, 12. Greenish
white, cth & warts of 2 black shaded. Feet dusky
d. 11 & 12 lines. Later all black d. except warts and
a series of fine dots centrally on segs.

Stage IV June 11 Hd black 1.6 mm Body black, sides & warts
whitish translucent, hair 1 & 2 stiff white d. 11
sca 5-v and at ends, brown d. 2-4. Short thick
black d. tufts single 5, 7, 12.

Stage V June 16 Hd 2.2 shiny black, setae white. Body black
densely covered with 20 hairs. Shorter hair white d. 11
a 2-4 and lat. square black tufts on 5, 7, 12 large than
other d. hair. Long hairs white on black with white
tip the white tip thickens black shaft subspinulose
beginning to look "mounded". Dorsal warts nearly obsolete.

Stage VI June 21 Hd 3.4 Do; d. tufts shorter but still above
other d. hair. Black, 13 d. sparse haired, lat warts ochreous
Hair ochreous brown. Black d. white tipped & mixed with
white. Sparse longer hair black white tipped.

Stage VII June 25 Hd 4.5 all short haired. Tufts obscure
like wax. Spinulae white.

Spring July 5 Cut July 25 Cat 16025

908

Eois inductata

Eggs by ♀ larper 15906 Wash. D.C. June 1 1900. Long
and nearly cylindrical. lies in one diameter but
not with any flattened surface; one end just
a little bulging, then tapering to a round blunt point,
the other (micropyle) roundedly truncate. About 18
longitudinal ribs, flattened at the joints of the faint cy-
clia cross striae which form square cells. Ribs denser
towards the ends; micropyle end coarse irregularly reticulate
pearl white, looking beaded from the flattened ribs.

Length .9, W .4 X .3 mm. wedge shaped from side.
Next day turned pink, shading to red at truncate end.

Hatched June 8 Hd round, free, shiny lobed, sutures w. 3 ±
Body slender, whitish, a rather broad even brown gray dorsal
band, separated on 2-4, ^{into 4 diffuse lines} but soon merging into a single
band d. round to 13. Tubercles faint mottled with brown.
Feet, many obsolete, setae short dusky with small enlarged
tips. Feet pale segs finely ± 20-annulate. A broad 5-v band,
the pair separate. Anal flat pale. Segs scarcely enlarged
centrally, uniform smooth. Ate clover and rag weed, pupating
late. Turned all greenish from food.

Stage I July 13 Hd round, occiput lobed, free, whitish, a white strip
on face of each lobe, containing an isolated brown dot opposite
middle of d. many brown dots filling in suture and apex of
d also on outer side of white band; labrum pale; ocelli and
tip of antenna brown-black. w. 4 mm (scant). Body moderate
slender, smooth, normal segs numbering (± 20) fine annulate
but not distinct; setae short black rather coarse. Dorsum
broadly dark brown, cut near its edge by a linear, slightly
flexuous pale opalescent sd line, most distinct at ends
but on incisures; side pale green; a broad sd band colored
like d. & slightly intensified at vii on each seg. Venter
pale green rather narrowly. Cth more reddish than rest of
abdomen. Feet all pale.

Stage II July 17 Hd 6 mm, cut below, head on feet free from 2,
antennae rather large, divergent, straight, white, with broad
band of brown mottling on a side of lobe & one near to
suture. Suture black brown as also dorsal suture above ant. black
tipped. Body moderate, segs ± 30-annulate rather obscurely. Dorsum
brown, fulvous, cut by narrow pale sd line and on
2-5 by a d. line also, sides concolorous, the anal bd. pale at
the sides. 5-8 fold white, slightly yellowish. A broad 5-v

purple brown band, emphasized below spiracle & a darker patch; a narrow contiguous pale line below the band; vent. channels whitish. Feet pale outwardly. Setae short black. Tubercles minute. (Ears close now)

June 23 Hd. 9 white with brown dotted bands as before. Body moderate uniform, finely annulate. Dorsum dark brown; a fine white sd line continuing white of head; a pale brown lat band in front contiguous to a still paler subapical one. S-V fold white a trace yellowish. A geminate S-V pale brown band, the upper half containing a narrow black dot below and before spiracles. Venter not broadly whitish. Feet pale the abd. joint brownish marked. No discoloration shield.

June 24 as above Hd. 1.1 but dead. Hd. end rounded, higher than wide, occiput bilobed, ant. distinct, whitish with brown shade, black dots, naturally a each side and below lobes are in ant. Setae dark. Body slender, seg. unmarked dorsal and, the central one ± 25 annulate, margins, annulet 1 somewhat larger. Whitish, dorsum pubescent brown shaded forming a dark geminate d. line diffuse externally followed by a pale sd line on old faint line in this distinct, edged by dark dotting. A whitish band on S-V fold; a narrow brown spot below it a little in front of spiracle. distinct on 5-7, joint on 8 & 9. Feet pale a little brownish dotted, the anal elongate d. Tubercles annulate dark, setae short dark, slightly enlarged before tip. Spiracles brown rounded. Then on some 20 setae present, forming about 20 hair d. all on each side of a segment, all alike in size and color most of the extra ones being sd in a continuation of the line of i and ii. and S-V joint.

(all dead)

909 = 456

Eggs of *Euphaneura mendica* 15898-905 from ♀ taken May 31, Wash D.C. Eggs June 2 pinkish ochreous (88456) (See 456 for I) smooth, fine, deep green, slightly flattened elliptical. Hatch June 9 at violet. Abd. all aridial grey green, feet pale no annules. Tubercles distinct, dark, a little elevated. at end of stage a broad irregular bordering purple sd band appears.

June 14 Hd. 6 strongly bilobed, round, flattened before free from 2, black, light on apex of lobes before. Body and head slender, uniform, joint not distinct, numerous annulate. anal flap truncate notched and feet with small plates; shield concave, unconvex. Tubercles small, black, in on the elongated seg. (5-10) on a large rounded elevated black base, all distinct. Setae short, black, club-shaped at tip. whitish, green from fine faintly a broad diffuse pubescent purple brown sd band 2-13, and feet marked slightly with the color and tubercles in surrounded by it. Spiracles black. Feet normal.

June 21 Hd. 8 rounded, slightly squared at apex, not bilobed, erect, free of 2, black, whitish marked over and in an erect line to tip of each lobe, joined by a line across above d. Body whitish, speckled by the distinct though not large, slightly elevated black tubercles shading to pale slate gray d. & v. seg. numerous, but not very strongly annulate. Dorsum irregular speckled with brown, on the 1st 10-13 forming a diffuse sd band; a more evident spot behind the spiracle. Shield concave not convex. Body somewhat slender and elongate apical smooth. All feet whitish.

June 27 Hd. 1.2 (ocut) cordate, erect, flattened before, the lobes slightly projecting before with an elevated tubercle i; whitish, gray mottled, a blackish shade about side i over line joint of d, reappearing in a patch on inner side of vertex of each lobe. Body long & slender cylindrical, uniform, 13 truncate, slightly concave first anal feet narrow d, no prongs. Central segs with a broad smooth space and, then ± 15 annulate, not very distinct, of the annulet between tubercles i and ii, the end seg. noticeably contracted. Flesh colored, shaded with greenish and sparsely brown dotted, on the still slightly indistinct a sd line but just broken up, forming a group of d. dotting on 9 and about 10 on 8 & 9. Tubercles slight,

prominent in blackish patches. Setae short, darker
 directed obliquely post. 100 setulae.
 I slung in delicately open web. July 9

910

Egg by *Pyralis farinalis*? 15911. Laid June 5, 1900
 Ellipsoidal, flattened above, below (like *Sphinx*)
 rounded, a little irregular from softness when
 laid, coarsely ^{granular} oblong, no rets. A series of
 slight longitudinal creases darkly marked & a
 little tinted toward the end in some. Pale
 flesh color. L. 5 width .3 mm. Not shiny. Loose

912

= 716?

Eggs by Cooper 15924 *Neurospora suberoscata*? (ca. 1st Jan 7)
 10 eggs, all 10 in when opening. Elliptical, strongly
 flattened, about 1 below, one end = little depressed
 and truncation. Surface very fine reticulate, surface
 yellowish green, shiny. $.8 \times .16 \times .3$ mm. In
 solution to glass. (Infected)

Aug 31

Deltoids

9/15

Eggs by 44 15931-2 *Ressie lateralis* var. Dlt. June 13 1900
 laid in water 6 hrs in glass. $\frac{2}{3}$ spherical, base
 flat but rounded under; slightly regular reticulate
 the net. well raised, irregularly hexagonal, elongated
 vertically, a little clearer than egg, about alike
 all over. No ribs. Ground glass white 2.6 to 4 mm
 later with irregular brown spots over a thin ring
 Hatching June 20 at midnight, rounded lobed, feet
 ventral, pale brown, dorsal, translucent, bases and
 outer darker, rest black. Lg. w \pm .3 mm. Cth
 gray, darker than bend; anal ft pale, gray, base
 transparent foot. Body ground glass white. Tubercles
 distinct large, black. The feet 1-10 colored grayish.
 11-12 very small & large, rest 13-15 functional.
 16-17 smaller, distinct, translucent equal. Stage a lateral
 moderate or rather robust, is very slightly enlarged
 Hatching June 20 at 5.55 slight wavy and
 ventral notches behind of analum. D.
 mostly brown, setae pale. Body
 transparent shaded. Spotted with
 brown, dark, almost black from feet
 Tubercles elongated brownish, setae
 short, pale. Slight flattened ventral
 12 rounded enlarged d. Cth
 brown, mostly basist, obscure. The feet slender, abd
 feet the feet 7 short
 July 1 all the 43 pale brown, slight ventral, darker
 shaded, setae pale, rest dark. Body same, more
 shading in when shading dull gray from 1-4
 line. Body short & rather robust. Tubercles brownish
 and pale, a little distinct. Setae pale, faintly tipped
 July 2 all the 44 H. 6 (a little) H. 40. Body dark
 slightly flattened V, largest part egg 12, in brown dlt.
 later. Setae out acuminate. Cth brownish, basist
 notched in feet base even, anal ft obscure. White
 marked. obscurely spotted with various sp. hardly
 a dorsal foot dark. Tubercles rather large blunt
 circular, brownish; setae pale granular. IV behind
 spindle, larger than it, on 11 low down in line with V.
 The feet mostly shaded. 1st pale, all functional
 those 2 7 & 8 not a trace smaller

After two weeks. St 7 stage in the last 100 are common
 July 12 H. 8 Rounded head, pale brown, covered &
 clouded with darker, setae coarse short, pale
 brownish. Body robust, 12 small enlarged, a little
 flattened ventral. Blackish gray, a little
 with a series of lat. glandular yellowish patches over
 central segs. This broad transverse, brownish blackish
 shaded on dorsum to 13, on 14 the yellowish patch
 below & behind 1 on segs 6-11. Tubercles small
 with short hairs, covering the tubercles. Tub
 blackish; setae short coarse, pale brownish contrasting
 12 III bent forward, 12 rounded all glandular tipped
 feet normal short, shaded, coarsely granular. Spine 1st
 125 near black distinct, yellowish ventral 12 short
 enlarged 1st pale out-stay, setae brownish pale
 no changes at all conspicuous.
 Aug 1 1900 H. 1.4 Round head, 1st stage last ventral 13
 distinct erect large short 1 from 2, count 12, round
 pale brown with long, smooth, translucent tubercles & dark
 brown corded. Body flattened, robust, short, 12
 somewhat enlarged, legs irregular 12-13 small. Tubercles
 large, rounded, elevated, but dark and shiny, round
 colorless with body black with pale circles at
 base. Setae pale, short, sharp, dark pointed from
 a blackened. Tubercles brownish black, a pale dark spot
 behind 11 on 2 part enlarged. Cth with 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
 1st & pale, mostly brownish, feet short, brownish, pale
 ventral pale grayish, rest mostly brownish. Setae pale &
 dark black near base. Some are pale, brownish.
 Polype Aug 13. Hatched not over 1.4 mm.

Oct Aug 19 1900 Cat no 16047 still plenty of larvae
 feeding, some rather small!

Below 111. Skin like translucent, mottled with a few red lines.
Tubercles distinct, though small & round. Brown black.
Scales stiff, pale, slightly enlarged at tips. Feet a few

920

On bottomland, Stony Brook, Va. Aug 13 1900
Hd. 2 mm. Rounded, broad, below 2 mm. 2 but
not reticulated, antennae divergent, rather long white
faintly green. Body moderate, rather cylindrical
tapering a little post, incision not strongly
cut. Translucent green, d. space a thin dark
with green vessel. Sd line yellow, 2-plate
broken into 2 dashes a each seg. ~~Subd~~ ^{Subd}
faintly spotted with darker green. Tubercles
inverted conical. Tubercles & scales distinct.
Feet normal, 7 smooth, 13 (prolegary hardened)
Aug 16 Hd 2.7 so pale green shiny, the
marginate tubercles white, green & rather
black. Opaque pale green with darker green
spotting. Young has also the Sd line which
you first into broken rings and also
apical from oblique lines. Sd line yellow
broken into 2 spots per seg. Spines
reddish. Feet normal, shape slender &
a little flattened and feet prolegary
& divergent. (All dead by Aug 19)

922

Egg by ♀ *E. alabasteria*. Cal. 16046. Strong var.
 Oth. No. Aug 15-16 1900. Pale whitish yellow, pale
 pink with reddish central band. Roundly elliptical
 one diameter less than the other but without
 flattened areas subtransverse at ommatophores and
 about 15 strongly pronounced ribs with fine V lines between
 the latter slightly raised throughout. Lines confluent
 obsolete in pits merging in them with the
 smooth and pit not always straight connection
 one shorter than the other. Size 55 x 4 x 35 (diameter)
 Some last row but quite attached edge leaf.
 Oct 25 1st row, weak flattened, pale
 lateral column, W. 3 ± dark brown slender white
 line, 1st row a white spot, 2nd row a white
 dark brown, 3rd row a faint white, 4th row
 1st row a white spot, 2nd row a white
 later white, a sharp band, ventral 1/2 a narrow 1/2
 line enlarged by a spot at center of 2nd seg
 faint irregularly annulate like catagene.
 Oct 30 1st row, 1st row, 1st row, 1st row, 1st row
 a faint white line, 2nd row a white line
 a faint white line, 3rd row a white line
 a faint white line, 4th row a white line
 a faint white line, 5th row a white line
 a faint white line, 6th row a white line
 a faint white line, 7th row a white line
 a faint white line, 8th row a white line
 a faint white line, 9th row a white line
 a faint white line, 10th row a white line
 a faint white line, 11th row a white line
 a faint white line, 12th row a white line
 a faint white line, 13th row a white line
 a faint white line, 14th row a white line
 a faint white line, 15th row a white line
 a faint white line, 16th row a white line
 a faint white line, 17th row a white line
 a faint white line, 18th row a white line
 a faint white line, 19th row a white line
 a faint white line, 20th row a white line
 a faint white line, 21st row a white line
 a faint white line, 22nd row a white line
 a faint white line, 23rd row a white line
 a faint white line, 24th row a white line
 a faint white line, 25th row a white line
 a faint white line, 26th row a white line
 a faint white line, 27th row a white line
 a faint white line, 28th row a white line
 a faint white line, 29th row a white line
 a faint white line, 30th row a white line
 a faint white line, 31st row a white line
 a faint white line, 32nd row a white line
 a faint white line, 33rd row a white line
 a faint white line, 34th row a white line
 a faint white line, 35th row a white line
 a faint white line, 36th row a white line
 a faint white line, 37th row a white line
 a faint white line, 38th row a white line
 a faint white line, 39th row a white line
 a faint white line, 40th row a white line
 a faint white line, 41st row a white line
 a faint white line, 42nd row a white line
 a faint white line, 43rd row a white line
 a faint white line, 44th row a white line
 a faint white line, 45th row a white line
 a faint white line, 46th row a white line
 a faint white line, 47th row a white line
 a faint white line, 48th row a white line
 a faint white line, 49th row a white line
 a faint white line, 50th row a white line
 a faint white line, 51st row a white line
 a faint white line, 52nd row a white line
 a faint white line, 53rd row a white line
 a faint white line, 54th row a white line
 a faint white line, 55th row a white line
 a faint white line, 56th row a white line
 a faint white line, 57th row a white line
 a faint white line, 58th row a white line
 a faint white line, 59th row a white line
 a faint white line, 60th row a white line
 a faint white line, 61st row a white line
 a faint white line, 62nd row a white line
 a faint white line, 63rd row a white line
 a faint white line, 64th row a white line
 a faint white line, 65th row a white line
 a faint white line, 66th row a white line
 a faint white line, 67th row a white line
 a faint white line, 68th row a white line
 a faint white line, 69th row a white line
 a faint white line, 70th row a white line
 a faint white line, 71st row a white line
 a faint white line, 72nd row a white line
 a faint white line, 73rd row a white line
 a faint white line, 74th row a white line
 a faint white line, 75th row a white line
 a faint white line, 76th row a white line
 a faint white line, 77th row a white line
 a faint white line, 78th row a white line
 a faint white line, 79th row a white line
 a faint white line, 80th row a white line
 a faint white line, 81st row a white line
 a faint white line, 82nd row a white line
 a faint white line, 83rd row a white line
 a faint white line, 84th row a white line
 a faint white line, 85th row a white line
 a faint white line, 86th row a white line
 a faint white line, 87th row a white line
 a faint white line, 88th row a white line
 a faint white line, 89th row a white line
 a faint white line, 90th row a white line
 a faint white line, 91st row a white line
 a faint white line, 92nd row a white line
 a faint white line, 93rd row a white line
 a faint white line, 94th row a white line
 a faint white line, 95th row a white line
 a faint white line, 96th row a white line
 a faint white line, 97th row a white line
 a faint white line, 98th row a white line
 a faint white line, 99th row a white line
 a faint white line, 100th row a white line

Head Sept 8 Hd. 7 white head by rounded with brown
 a black, leaving a white streak on face of each
 side and a band of white. Body slender, brown
 (± 40) annulate, shell yellow on the sides. Back
 with a double brown stripe, a double
 cross d. line and a double streak with black
 on the sides, arching over a white d. streak
 and having a blackish line on the sides. Sides
 blackish brown, lat. line. Venter broadly
 shaded in dull reddish, leaving a 6-8 x 8 pale
 streak. Setae short black inconspicuous.

Head Sept 16 Hd. 95 20. Body slender, long, somewhat
 slender, as before. Setae pale yellow, back
 with d. greenish line, and 2 pc sep & black
 streak, also fine faint brownish line, the lat
 upper with obscure brown streak. Venter broadly
 near black, fox pale ventrally, and dorsal a pale
 ventral line a black streak. Evidently a *Bibionidae*.

C. J. Carter
11/17/12

423

♂ 45 More than wide, smooth head, strongly
convex. Scales below, flattened before. Green
front surface & high a blackish. Long with black
in line dorsally, pale reddish. Body slender,
quadriform, 12 bridges. D. 9, 10, 11. Trans-
verse bands which 8th (below 11) and the lower
trachea in on 5-7 and less on 8 enlarged. Black
other also black but minute. Setae long
black pointed, subcapitate present, rounded.
Feet all pale and chitinous. No shield or plate
♂ 46 Hd 7 High. Scales before, and slightly below
segment 2. A 5th water the same as 45 but the
shape and coloration different. Antennae present
bipalpal, green, pale black whitish ringed,
black black. Feet brownish up to 4th joint,
12 slight enlarges. 1. Green tubercles colored with
quadriform black but faint, 11 + 5-7 + 1 + 1
larger & black. Largest a 6, not very conspicuous.

From irregular white lines, viz. geminate d. small
 & subblack, adduct (below ii) & (below iii). 8 or more
 which divide the other narrow. Setae
 blackish rather long, tubercles 12 conspicuous elongated
 but slender as 7 or 8. This first beneath as 7 or 8. Ypsacanth
 2nd concolorous, it below the other white line.
Sept 11 Hd 1.2 as before, green, ocelli black centered
 Body slender, 12 a little enlarged. Feet 9 10, 12
 cylindrical, bipinnate a little recurved. Translucent
 green, 8 green in 9 long, pal yellow, concolorous
 white ad-d. line narrow, rudens d (i & also ii)
 narrow lower sd (below ii) and near the sd) narrow
 white stig. all as before. Tubercles distinct, a little
 elevated small, white, iii " 5 & 6 black
 feet concolorous slender & spinules whitish.
 no shields. Setae blackish rather long. iv below
 on 5, below lower 6-8, opposite 9-10, $\frac{1}{2}$ 6 & 8 on 11,
 lower 6 on 12. i-ii 12. Line irregular edged notched
 slightly 12 Hds 1.8 Round separately, slightly lobed, ciliated
 before oblique, 1st joint 2. Translucent shiny green
 ant. 1 palpi yellowish black black. Body moderate
 moderate 12 enlarged d. green no shields with white
 line. add narrow cristae, sd (below ii) & (below iii) & (below
 upper 1st (below ii) and stig. narrow. Tubercles white
 iii 5-6 black but small in inconspicuous. Spinules
 white, narrowly black narrowed. Feet green, all on
 9-14, 13. it below spinule. Setae blackish but obscure
 & rather as. has the green darker green (more brown)
 esp along head and above 8th line, making the
 line more undulated. Ocell blackish iii distinct white
 length, longest 6 & 8 but plain 5 & 12. Hd brownish a tube
 w. 2.0 mm
 Specimen Sept 16 Larva 1st inst.

925

"*Yasminoides* larva found under a rock at Las Vegas Hot Springs N.M., Feb 16 1931 (Wilmoth & T. D. R. Cokerrell). Close by were many rocks and pines (*Pinus scopulorum*)."
 1st rounded smooth, midline not depressed, slightly higher than wide, claspers small. Yellowish black slightly mottled with gray esp. toward sides. Antennae and legs of pale brown, hind legs gray; clasper dark, labrum dark, epistoma gray. Antennae 1st joint with 2nd joint colored. Head 1st 2nd segments black above reddish about mouth w. 3.5 mm. Body smooth, flattened ventrally, width d. 12 very distinct prominent. Epistoma strongly serrate. No distinct mark. Lat. 1st row with 12 rounded prominent. Pharynx with 12 indistinguishable and the 5th row (11) slightly raised. Spines covered with rather stiff black hair, slightly enlarged on 1st and 2nd. Shale head dark hair softer and a little curly, very sparse on thorax, thicker outspread on the abdomen. Lat. 1st row, large and again broken 5-8, esp. toward incisions. Black and gray slightly reddish mottled. The 1st row reddish. Second row black, a series of dull gray spots. 3rd row just a row containing short tufts of pale hair just behind paired 3 reddish streaks. More slender, fainter, broken reddish streaks. 5th position. Lat. again irregular shaded with gray containing white hair. A pallid area about vi slightly tinged with reddish. Feet dark brownish. Pale ventrally. Small plates and feet dark. 2 broadly broad, whitish slightly raised & black a round line. Anterior dark gray spotted shaded with flesh color along pedal line. (In fresh larvae white tufts will be along d. corners on lat. Color dull by hibernation). Dec 1931
 Found Mar 4 lat. contained. Has before, occurs

at all latitudes, a small less than $\frac{1}{2}$ ^{far} piece small fusiform black. Fine shading gray, pointed, not at all shiny, all extreme ends white; hair 2d number black. Lat. W 4.5 mm Body as before but highest colored. Black with small range marks and restricted white tufts; 1st and 2nd joint 1st shaded gray white, the former bisected by a black with wider behind and with some black powderings posteriorly. The range is distributed in 2 adduct dots per seg. the ant. the longitudinal, the post. transverse. 2nd dot minute, pointed but less rounded. The ant. one larger, more obscure white rather than range on the thorax, a small patch below epistoma and the slight humped being vi also range shaded. White tufts are a row of small ones and a row of 3-13, short subterminal, the hair covering, 2 tiny patches. 5th just to the 2 1st spots, which lat. area to humped irregular short tufts reaching further dorsally in the incisions. Lat. c. d. tufts in 1st row gray white shading. Primary and large 2nd row black. Fine long rather numerous; hair from vi below white. Body somewhat *Yasminoides* shape, moderately flattened, with striations, vi slightly prominent, 12 without enlargement. Abd. feet black with 2 ventral white lines. Tho. 1st abd. clasper dull reddish.
 Found Mar 29 Hd 5 mm Black, grayish brown, all small, glossy white as before. All same. Gray shading subterminal, reduced. 2nd & 3rd feet dots large and added but small, other dots more whitish. Shells of plate lantern gray, black powdered.

Mar 1901

926

Prodenia cornuclata (Desf. for Wm. Clatenden from
Honor. Leland) I Hd rounded bilobed, shining brown
black, apex moderate, smooth slightly projecting
internal small, normal, w. 3 mm. Body slightly
enlarged at joints 3-4 and 12, superficial normal
the first small, equal, the rest black, whitish
a red brown dot, patch on 5 & 11 with faint
brown streak on 6-8 of each side. Cth distinct,
transverse slightly expanded behind with hy.
folds, no tubercles, not brown-black tubercles
bilobed rounded moderate normal. Small
dotted small brown patch.
II Hd rounded wider than high, slightly bilobed.
Brownish black, front of eye, brownish black, brown
greenish brown on each side, w. 3 mm. Body brown
and color, the upper half black, the lower half
and anterior half of a coppery red, the rest
coppery red, reddish.
III Hd rounded bilobed, about as high as wide, smooth
blackish brown, w. 6 mm. Body slightly enlarged at joints
3-4 and 12, superficial normal, internal normal.
Tubercles minute, brown, small. Green from dark
brown patches on 5 & 11, large, covering the spiracles
and a small rounded spot on 3. Numerous
transverse white lines covering 4, 8, 9, 10, 11, 12
and 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Prodenia 5d patch on 2, lat on 5 & 11 as before
Body more or less smooth with brown tubercles
the tubercles. 3 white lines cut on column on
the first brown also green, and brown shielded
V Hd as before, brown reticulate with
tubercles on the sides, the brown dark color shading
clayey, brown red edge of pale green shaded fine
red over the tubercles has marked, green
finely mottled reticulate with brown, which is
like blackish, but in the mottling except a
white persists as a series of white streaks with
center 1 seg, 3-12 red dash forming the brown edge
of a brown black patch, then on 3 and 12 longer the
central ones smaller, sometimes not developed.
6 lat patch on 5 & 11, upper c-v line undulated
brown, waved reddish. A line on tubercles, the
line on 2-3. Cth olivaceous brown with 3 pale
and 12 concolorous, feet greenish. Slight irregular
black dot on 13 d.
II Hd brown, rounded bilobed, a large reaching on
the vertex brown marked on before, the rest not
prominent, not retracted to 2. Rest cylindrical
normal, gently enlarged 3-5 and 12, tapering to
6 & 13. Feet moderate normal. Brown and
finely mottled brown & whitish the tubercles on
before but somewhat more defined. 5d patch on
a patch normal, dorsal on 3-12 edged below by
a yellow white line bordering a dot on 4, in the center
on smaller or absent but three on 3, 11 & 12 for
distinct. Other line distinct on last brown except
d on 2-3 narrow pale. Lat. patch on 5 & 11 small
or obsolete. Cth olivaceous with d line buff or
trace of sd. Small pl small olivaceous black
dotted, 13 absent & faintly marked example
spicula black. Feet greenish iv 5 above middle
6-8 above lower 7-10 middle 11 & 12, 12 lower

927 (cf 918)

Passicampa sp. *gambelii* Cornell in Texas (Bolsinger)
 Hatching Apr 5 1901. Chlorinated but no marks.
 Laid in a patch. As long as wide, reaching half
 around a small twig. Elliptical flattened on sides,
 longer end squared, truncate, rounded, then nearly
 circular center raised, small end rounded. Laid
 erect on small end, fastened together by gum
 but the exposed end clear, the base heavily white
 and the space between egg visible. Sided white
 a dark micropylar dot. Surface smooth slightly
 shining, scarcely discolored. 1 x .6 x .5 mm
 Hatch by hole at truncate end, hatching Apr 1-18
 at 3.3 rounded elliptical higher than wide, black apical
 white & long 2 pale setae. Body rounded, black to
 and edge, the rest pale and a pale margin at head
 5-11 faintly not at end, about above, diffuse below.
 1 spand. lat. a ant. 1 ped. 1 post. 1 seg. 1 ant. 1
 post 8 or 10 white. Feet small but elevated, black
 with small tufts of pale rather stiff hairs.

XXVI May 1 1901

929 = 645

Allophila pometaria eggs on apple from W. R. Smith, Lily Lake, Ill (Sept 29). Said to be a dense mass twice as long as broad reaching to around a twig. Subcylindrical, flattened, basal end a little rounded, slightly asymmetrically bulging, micropylar end truncate, broad rounded, the center elliptical, a little depressed with a micropylar depressed dot, surface slightly shiny, obscurely reticulate, the truncation and irregular deepened somewhat doubly ringed. Laid in gray uniform on single egg though the flattened mass looks like a little flattened. 1.6 x .85 x .4 mm.

Hatched Aug 2 (1901) 1st inst with full legs, head with a poorly marked dorsal ridge; head round, black, yellow between antennae, maxillary & labial palps a much longer - palps black w 3 mm. Setae short pale with hollow tips, most distinct on legs, antennae rather robust, not elongated, the central segments are longer than thick. Feet normal, rudimentary developed. Body very short, not used pair as of normal - black like the glabella. The other abd feet resemble antennae, abd divided into two circular parts, the flat, sides ant, slender, darker on edges, bordered by blackish tubercles and pale lat striated, w narrow paired ones, body greenish yellow, striped with blackish smoky on back & (caudal) and on sides; i & ii (and feet less) (and) iii, and a broad dorsal black-tipped segment ventrally. Tubercles distinct rounded with striations, black on pale rings. The feet pale, faintly smoky. The first 9 segments brown, and the last 10 pale green with obscure pale lines, smooth shiny. The feet 9 & 10 black, others white. Hatched Sept 6 1st inst. Head, slight bilobed, flattened, fore, very pale green, immovably, w. 6 mm. 2nd inst. Head, not large. Dorsal large, like young form, broad

Body cylindrical normal, not elongated, feet normal with very short, not used pair as of, the dorsal pale. Tubercles slightly elevated but concolorous obscure, pale short pale. Green with obscure pale whitish lines, the space between more or less distinctly shaded with blackish. From an sd double the width narrower, lateral, see the latter faint shade in the fold. Feet pale, smooth black. Shed Sept 30 Hds 1.1 mm rounded, slightly bilobed, a little oblique whitish, faintly green, immovably, w with gray-green reticulation on the inner side & lobes, as before, pale green, white lined, sd, flat, broad subcap with pale greenish white line, the space between up the hood & sp more or less slightly shaded with grayish black, the ventral not connected so. Cylindrical, anal plates pale. Tubercles elevated rounded, distinct but concolorous, setae short, stiff, slender, i-ii 2 line, iii 1.5 line, before spread, iv at base same, v before, vi 1.5 line, vii a group of 3 setae, not scattered, all normal and chitinous like the 24 not being elongated. abd feet 9 well formed by small. Sprawl black ringed, sd tubercles blackish, thoracic feet pale. See 645 Hds 1.8

931

Erythraea, internal features of *guttulipes*
 Hatchling Col. Mar 11 1901. Hds. 2.1 Rounded.
 Lightly lobed, head flat. D. round. Antennae
 the outer one depressed, light red-brown, epistoma
 pale yellow black. Body slightly flattened
 also strongly 2-annulate. C-sh. large but
 rather obscure, transverse shiny black.
 Anal plate very large black. Tubercles
 small black. i & ii in line, iv & v normal. Feet
 with annulets in places. Dark purplish green
 black. Skin coarsely wrinkled, shagreened.
 Spicules rounded black. Thin feet brown
 setae fine, brown, rather long - i & ii 10-15.
 On 13 and a median dorsal line. 2 in small
 crescent before spiracles, not contrasted.

Col. # 16539, Golden, Col. (prairie near Fort Collins) is
Erythraea junctolabellus Hulst. June 1901

932 (see 1023)

Eggs by 99 16223-4 *Erythraea californica* are same from
 Golden (infertile?) May 12 1901. Ovary full of eggs. Col.
 Low conical, practically spherical. Shiny
 nearly flesh color. Rather coarsely reticulated,
 shaped almost definitely reticulate at vertex but
 the lines broad and confused. D. 1 mm H. .7 mm

Hatched May 19



13 and 14 and 15 hair 1 mm. Vi present 5-12
 no hair. ii and upper iii hair black. rest
 white, knobbed. C-sh. 4 hair 5-8 black;
 2 detached in tiny warts. Hd 1.1 and 1.2
 shiny black. Body translucent, nearly yellowish,
 with a pinkish dark brown, the feet black.
 Slight red-brown shading about warts.
 Hairs long, fine. Later brown black spreads
 defining a straight pale dorsal line.

Mid May 25-1st, 5-8 black. Body dark gray, warts black
 small, ii large, rest subequal, normal, many brownish
 a whitish d. line as a longitudinal of the very faint shield
 - by plate black, then black finally, pale 5-8, with
 long and about equal, soft, obscure, knobbed, not dense
 (all shed, but got III in one from and 4 shed from 17)

Mid 28 June 28 are essential change.
 Shed 28 June 28 head pale reddish, gray d. stripe white,
 a faint white space between iii and iv as in 1023
 1st 1.5 mm blackish in section of lobes before.

March - Life history C.C. 21, 210, 1959
 5 stages - 1 shed

934

Yucca found by Geo. Adler on the ground under
willows near Selden Col. Desc. May 14, 1901
(mild wet [and]) Hd 1.6 round erect squarish. 2 erect
hairs; whitish, a large black patch covering vertex &
each lobe runs to base side. front, leaving no. sutures
small, pale. an angled patch on vertex and on
in lower part of 2 pointed above; epistoma pale
minutely black. Body cylindrical, no. 1 seg
not elongated. 1st radius small. larva
pale white with many black marks and
fine black red lines. a dorsal and spiracular
diffuse red bands. the latter broken at spiracles
by white ground color. long black spots about
i, ii, vi with numerous smaller dots between
i & ii black, small; a continuous black s-v
band covering vi below which the center of 6 pale
gray dotted with the scattered black behind
vii and viii and black mottled sparsely
The feet & spiracles black. Abd. very gray
like center with black tubercles. No shield
2 and 13 white & black spotted, concolorous
black about stiff. turning pinkish medially
Out May 30, 1901 Cat no 16491

Proctos. occidentalis Thoms

Bred Tachinid

Tachina mella Walk

935

Acutans eating leaves of a bean plant (H1)
Foothills, above Selden Col. May 18, 1901
Hd 3.3 Shiny black. Labrum yellowish anterior
at base pinkish pale. Body black, the feet &
abd. pinkish pale. With large several
Acutiform i & ii with shiny bases, i not as
large as ii which is elongate. Hair abundant,
bristly, opening backward, rather short before
long from 12-13. Vents from i and a few on
a side of ii are yellow, then just black round
with white, mostly white from ix-vi. Vents
iii orange the rest black. A light yellow
d line broken into 2 spots before distal
vent of 10. 1 macroseta, a line on 2-3. On
shield, 2 with light base, red round.
Out Selden Col. June 4. 2 line round about
the dots. Vent iii black like other. Hair
mostly all yellow, w/ a few black ones round
some larger white ones just.
♀ out July 13, 1901 Cat. 17423

Hypocentrus *Originalis* Ste = *maculosa* Wm.
+ *maculosa* 1868

936

Arctian from San Carlos Fort Hills May 12.
 Eats alfalfa. Hd 27 shiny black, epistoma
 and base of antennae pale. Body brown
 black, abd. feet pale reddish. A broad distinct
 sharp d. line narrowed between i, cream
 white sprinkled shaded in measures.
 Small black hair bristles scarcely noticed.
 small less than $\frac{2}{3}$ ii, ~~ascending~~ bases, curved
 hair all black from S-V, longer on 12-13.
 i with small, ii with large.

Cult

Spentia fignata Sm (1-fallida)

937 *Astragalus mollis*

Microscopical? egg on back of leaf of top of plant.
 Denver Col May 14 1901.
 Subepidermal rounded about flattened below
 16 vertical ribs, narrow elevated, crossing
 the vertex running to median suture
 micropyle cross shape fine, beaded, not
 raised, marking the ribs and spaces. H. 8
 W. .6 mm. Hatched May 18 but died as food dry

940C wigger like B but hd. all pale brown
epiloma whitish pale pink. Cth faint black
a edge. Red all round green & round dark
pale slightly elevated & pale dusky brown

940

Leaf types on young white oak flatle common Col
May 18 1931. Wood, pale brown.

Hd. whitish with shield black, not for painted
The feet black. Body pale green. Tubercles small
blackish in small dusky areas. 1st-4th. 2nd
cylindrical. A small brownish white with feet. Hd
black, cth whitish. Antennae black at edge, the feet pale
top of 2 & 4 black. Hd 1.2. Venter compact pale cream.
3 large black wigger. Hd black 2.0 whitish whitish in
face, cth greenish black on edges. Body brownish green
blackish brown. 9 plates yellowish, or pale brown
yellow. Feet pale, 2 black. makes a pupa & slight white
antennae 11 cut (16647)

with 940. Hd pale whitish brown. Body pale
green with sd whitish stripe. Very pale
yellow. Tubercles conspicuous. Feet pale
shield not outlined, concolorous whitish.

Selecting for Bunk 942 (mixed like 942)

with 940 Hd pale greenish brown, body pale
green translucent. 9 plates whitish, no line on
tubercles. Shield blackish in white brown
ventrally a brown. Head brown. 9 plates faint
orange yellow. Shields 1 feet colorless cth shiny
cut June 1 1931 Cat 16637 B Cut June 10 Cat 16634

Selecting for Bunk 943

with 940. Hd & shield black, body pale. Headish
mottled with red brown. Ovary long slender
lined & brownish pale. 9 plates whitish. Tubercles
blackish. D. line brownish irregular. 5 d
brown blotched below. Cat. 2 & 3. Head
The feet black. Ant. 2. Brown to black.
Cut June 19 1931 Cat 16650-1

944

Leaf types on young wild cherry with 940.

Hd. 1.0 Hd & shield black. The feet black
ant. 1st & body spotted green, tubercles small
black, legs with brown bands below.

Hd. 1.5 with shield black. Body green. Head
obovate shaded d. having tubercles pale
The feet black. 13 green, feet short. Antennae
Some with sd underlying red pattern black, cth
pale brown red on front.

Cut June 4 1931 Cat 16632-3

945 (see 1138)

Eggs on wild cherry flatle common Col,
May 18, 1931. Hd 1.8 rounded, approximate
black, erect, dark red-brown, greenish irregularly
reticulate with pale yellowish. Small ap.
broad and brown. Germinal d. 1.8 d. brown line
on a pale field. curved, a geminate, wavy,
brownish dark black line on a nearly
white ground, shading to brown on anal ft.
5th ground yellowish reddish green and brown
pale ground brown line ventrally. Feet
pale sd brown lined, the blackish
interband ventrally. Hd 2.9 on d. line red
black on a red ground becoming whitish into
conspicuously whitish brown. See June 26
July 2nd March 24 1932

Doubtless Eranis telisera, at least
have feet like it. 3.0 brown x 1.5

946

Hemiteles? gregarious or solitary? white smooth outer plates
lateral w. May 20, 1901. Black with white
striae and broken trace of a granulate d. ant.
Ground reddish stip about on 3. Hd polished
shiny shining. Spines all long, branched,
normal length d. n 10-13, anal pl smooth.
Hd 1.1 ± spine d. 12-8 slightly longer. 3 few
spin 23 hairs, also c. & l. d. Very minute.
Ant legs 24 24 shining dark, light. Spine rounded
all long, equal, those of 2 - slightly longer.
Black, slight white dotted at stn from pale
yellowish black hair black tubercle; and white
line - brown & red 3-4, sd distinct 8-13 ant,
etc., surface by spin @ raised & broken say.
Round pale orange patch behind spiracles 5 and 11
latter smaller.
June 2nd 1 & 3. Black, 23 hairs white 8th black, small
arrows with 23 yellow dots center of black hair
tubercle. sd lat & curved tubercle hair yellow
broken; in brown reddish. Spine all long spines
black, even setae white. Elevated spot hind
head 4 x 1 reddish.
June 20 1 & 4.5. Same as last but 1 thin faint dark
concentric red instead of black.



946

Hamulites? *progenitor* white ocher oak *Platanus* *californica* May 20, 1901. Black with white outline and broken black of a granular d. ant. 9. ground reddish also d. ant. 5. Hd polished shiny shining. Spine all long, branched, normal, single d. n. 10-13 anal pl smooth. Hd 1.13 Spine d. 1.2-4 slightly longer. 3 pairs 2nd hair also c. of hd. Very minute. Head May 25 2± shiny black, lips. Spine all long, equal, those of 2 slightly longer. Black, slight white dotted on the fine pale 2nd hair, which have black tubercles; and white line - brown of d. 3-4. 3d distinct 2-13 ant. 10. Antennae by spine 2 joined & broken say. Head pale orange patch behind spiracle 5 and 11 rather smaller. Head June 6 4.3. Black 2d hair white red black, trunk covered with 2d yellow dots, center of black hair tubercles. 3d lat & round ant. 10. 1st hair yellow broken; 2nd hair reddish. Spine all long, spine's black, some setae white. Elevated spot. Head June 10 4.11 reddish. Head June 20 4.5. After the 1st & 2nd feet dark, remaining red instead of black.

H. virgin from 1st valley

946A In willows at Ogden. Very large, head of white and feet light mahogany red. Yellow feet, except ant. all are d. 1 lat. Spines showing good yellow except narrow, and a few black. Spine 2 all light brown, the long ones black, shaded with brown. Spine at base of 2. Head June 15 4.5.

H. virgin from 1st valley

Scymnus *lax* VIII

947

Scymnus on wild cherry *Platanus* *californica* Col, May 20. Very variable but probably all one sp. Hd round, erect, rounded bilobed, reddish white in ground, a black line on vertex, one near apex of bridge, one above granular, irregular and with dark blotches, 7.8 mm. Body smooth, rather polished, normal, and elongate, setae and tubercles minute except in 12 which are elevated. Back gray faint brown. Thorax red. 1st hair of breast. There are 2 d. 3d, lat, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Cal. no. 18081-8. 1st ant. 18. 2nd ant. 18. 3rd ant. 18. 4th ant. 18. 5th ant. 18. 6th ant. 18. 7th ant. 18. 8th ant. 18. 9th ant. 18. 10th ant. 18. 11th ant. 18. 12th ant. 18. 13th ant. 18. 14th ant. 18. 15th ant. 18. 16th ant. 18. 17th ant. 18. 18th ant. 18. 19th ant. 18. 20th ant. 18. 21st ant. 18. 22nd ant. 18. 23rd ant. 18. 24th ant. 18. 25th ant. 18. 26th ant. 18. 27th ant. 18. 28th ant. 18. 29th ant. 18. 30th ant. 18. 31st ant. 18. 32nd ant. 18. 33rd ant. 18. 34th ant. 18. 35th ant. 18. 36th ant. 18. 37th ant. 18. 38th ant. 18. 39th ant. 18. 40th ant. 18. 41st ant. 18. 42nd ant. 18. 43rd ant. 18. 44th ant. 18. 45th ant. 18. 46th ant. 18. 47th ant. 18. 48th ant. 18. 49th ant. 18. 50th ant. 18. 51st ant. 18. 52nd ant. 18. 53rd ant. 18. 54th ant. 18. 55th ant. 18. 56th ant. 18. 57th ant. 18. 58th ant. 18. 59th ant. 18. 60th ant. 18. 61st ant. 18. 62nd ant. 18. 63rd ant. 18. 64th ant. 18. 65th ant. 18. 66th ant. 18. 67th ant. 18. 68th ant. 18. 69th ant. 18. 70th ant. 18. 71st ant. 18. 72nd ant. 18. 73rd ant. 18. 74th ant. 18. 75th ant. 18. 76th ant. 18. 77th ant. 18. 78th ant. 18. 79th ant. 18. 80th ant. 18. 81st ant. 18. 82nd ant. 18. 83rd ant. 18. 84th ant. 18. 85th ant. 18. 86th ant. 18. 87th ant. 18. 88th ant. 18. 89th ant. 18. 90th ant. 18. 91st ant. 18. 92nd ant. 18. 93rd ant. 18. 94th ant. 18. 95th ant. 18. 96th ant. 18. 97th ant. 18. 98th ant. 18. 99th ant. 18. 100th ant. 18. 101st ant. 18. 102nd ant. 18. 103rd ant. 18. 104th ant. 18. 105th ant. 18. 106th ant. 18. 107th ant. 18. 108th ant. 18. 109th ant. 18. 110th ant. 18. 111th ant. 18. 112th ant. 18. 113th ant. 18. 114th ant. 18. 115th ant. 18. 116th ant. 18. 117th ant. 18. 118th ant. 18. 119th ant. 18. 120th ant. 18. 121st ant. 18. 122nd ant. 18. 123rd ant. 18. 124th ant. 18. 125th ant. 18. 126th ant. 18. 127th ant. 18. 128th ant. 18. 129th ant. 18. 130th ant. 18. 131st ant. 18. 132nd ant. 18. 133rd ant. 18. 134th ant. 18. 135th ant. 18. 136th ant. 18. 137th ant. 18. 138th ant. 18. 139th ant. 18. 140th ant. 18. 141st ant. 18. 142nd ant. 18. 143rd ant. 18. 144th ant. 18. 145th ant. 18. 146th ant. 18. 147th ant. 18. 148th ant. 18. 149th ant. 18. 150th ant. 18. 151st ant. 18. 152nd ant. 18. 153rd ant. 18. 154th ant. 18. 155th ant. 18. 156th ant. 18. 157th ant. 18. 158th ant. 18. 159th ant. 18. 160th ant. 18. 161st ant. 18. 162nd ant. 18. 163rd ant. 18. 164th ant. 18. 165th ant. 18. 166th ant. 18. 167th ant. 18. 168th ant. 18. 169th ant. 18. 170th ant. 18. 171st ant. 18. 172nd ant. 18. 173rd ant. 18. 174th ant. 18. 175th ant. 18. 176th ant. 18. 177th ant. 18. 178th ant. 18. 179th ant. 18. 180th ant. 18. 181st ant. 18. 182nd ant. 18. 183rd ant. 18. 184th ant. 18. 185th ant. 18. 186th ant. 18. 187th ant. 18. 188th ant. 18. 189th ant. 18. 190th ant. 18. 191st ant. 18. 192nd ant. 18. 193rd ant. 18. 194th ant. 18. 195th ant. 18. 196th ant. 18. 197th ant. 18. 198th ant. 18. 199th ant. 18. 200th ant. 18. 201st ant. 18. 202nd ant. 18. 203rd ant. 18. 204th ant. 18. 205th ant. 18. 206th ant. 18. 207th ant. 18. 208th ant. 18. 209th ant. 18. 210th ant. 18. 211st ant. 18. 212nd ant. 18. 213rd ant. 18. 214th ant. 18. 215th ant. 18. 216th ant. 18. 217th ant. 18. 218th ant. 18. 219th ant. 18. 220th ant. 18. 221st ant. 18. 222nd ant. 18. 223rd ant. 18. 224th ant. 18. 225th ant. 18. 226th ant. 18. 227th ant. 18. 228th ant. 18. 229th ant. 18. 230th ant. 18. 231st ant. 18. 232nd ant. 18. 233rd ant. 18. 234th ant. 18. 235th ant. 18. 236th ant. 18. 237th ant. 18. 238th ant. 18. 239th ant. 18. 240th ant. 18. 241st ant. 18. 242nd ant. 18. 243rd ant. 18. 244th ant. 18. 245th ant. 18. 246th ant. 18. 247th ant. 18. 248th ant. 18. 249th ant. 18. 250th ant. 18. 251st ant. 18. 252nd ant. 18. 253rd ant. 18. 254th ant. 18. 255th ant. 18. 256th ant. 18. 257th ant. 18. 258th ant. 18. 259th ant. 18. 260th ant. 18. 261st ant. 18. 262nd ant. 18. 263rd ant. 18. 264th ant. 18. 265th ant. 18. 266th ant. 18. 267th ant. 18. 268th ant. 18. 269th ant. 18. 270th ant. 18. 271st ant. 18. 272nd ant. 18. 273rd ant. 18. 274th ant. 18. 275th ant. 18. 276th ant. 18. 277th ant. 18. 278th ant. 18. 279th ant. 18. 280th ant. 18. 281st ant. 18. 282nd ant. 18. 283rd ant. 18. 284th ant. 18. 285th ant. 18. 286th ant. 18. 287th ant. 18. 288th ant. 18. 289th ant. 18. 290th ant. 18. 291st ant. 18. 292nd ant. 18. 293rd ant. 18. 294th ant. 18. 295th ant. 18. 296th ant. 18. 297th ant. 18. 298th ant. 18. 299th ant. 18. 300th ant. 18. 301st ant. 18. 302nd ant. 18. 303rd ant. 18. 304th ant. 18. 305th ant. 18. 306th ant. 18. 307th ant. 18. 308th ant. 18. 309th ant. 18. 310th ant. 18. 311st ant. 18. 312nd ant. 18. 313rd ant. 18. 314th ant. 18. 315th ant. 18. 316th ant. 18. 317th ant. 18. 318th ant. 18. 319th ant. 18. 320th ant. 18. 321st ant. 18. 322nd ant. 18. 323rd ant. 18. 324th ant. 18. 325th ant. 18. 326th ant. 18. 327th ant. 18. 328th ant. 18. 329th ant. 18. 330th ant. 18. 331st ant. 18. 332nd ant. 18. 333rd ant. 18. 334th ant. 18. 335th ant. 18. 336th ant. 18. 337th ant. 18. 338th ant. 18. 339th ant. 18. 340th ant. 18. 341st ant. 18. 342nd ant. 18. 343rd ant. 18. 344th ant. 18. 345th ant. 18. 346th ant. 18. 347th ant. 18. 348th ant. 18. 349th ant. 18. 350th ant. 18. 351st ant. 18. 352nd ant. 18. 353rd ant. 18. 354th ant. 18. 355th ant. 18. 356th ant. 18. 357th ant. 18. 358th ant. 18. 359th ant. 18. 360th ant. 18. 361st ant. 18. 362nd ant. 18. 363rd ant. 18. 364th ant. 18. 365th ant. 18. 366th ant. 18. 367th ant. 18. 368th ant. 18. 369th ant. 18. 370th ant. 18. 371st ant. 18. 372nd ant. 18. 373rd ant. 18. 374th ant. 18. 375th ant. 18. 376th ant. 18. 377th ant. 18. 378th ant. 18. 379th ant. 18. 380th ant. 18. 381st ant. 18. 382nd ant. 18. 383rd ant. 18. 384th ant. 18. 385th ant. 18. 386th ant. 18. 387th ant. 18. 388th ant. 18. 389th ant. 18. 390th ant. 18. 391st ant. 18. 392nd ant. 18. 393rd ant. 18. 394th ant. 18. 395th ant. 18. 396th ant. 18. 397th ant. 18. 398th ant. 18. 399th ant. 18. 400th ant. 18. 401st ant. 18. 402nd ant. 18. 403rd ant. 18. 404th ant. 18. 405th ant. 18. 406th ant. 18. 407th ant. 18. 408th ant. 18. 409th ant. 18. 410th ant. 18. 411st ant. 18. 412nd ant. 18. 413rd ant. 18. 414th ant. 18. 415th ant. 18. 416th ant. 18. 417th ant. 18. 418th ant. 18. 419th ant. 18. 420th ant. 18. 421st ant. 18. 422nd ant. 18. 423rd ant. 18. 424th ant. 18. 425th ant. 18. 426th ant. 18. 427th ant. 18. 428th ant. 18. 429th ant. 18. 430th ant. 18. 431st ant. 18. 432nd ant. 18. 433rd ant. 18. 434th ant. 18. 435th ant. 18. 436th ant. 18. 437th ant. 18. 438th ant. 18. 439th ant. 18. 440th ant. 18. 441st ant. 18. 442nd ant. 18. 443rd ant. 18. 444th ant. 18. 445th ant. 18. 446th ant. 18. 447th ant. 18. 448th ant. 18. 449th ant. 18. 450th ant. 18. 451st ant. 18. 452nd ant. 18. 453rd ant. 18. 454th ant. 18. 455th ant. 18. 456th ant. 18. 457th ant. 18. 458th ant. 18. 459th ant. 18. 460th ant. 18. 461st ant. 18. 462nd ant. 18. 463rd ant. 18. 464th ant. 18. 465th ant. 18. 466th ant. 18. 467th ant. 18. 468th ant. 18. 469th ant. 18. 470th ant. 18. 471st ant. 18. 472nd ant. 18. 473rd ant. 18. 474th ant. 18. 475th ant. 18. 476th ant. 18. 477th ant. 18. 478th ant. 18. 479th ant. 18. 480th ant. 18. 481st ant. 18. 482nd ant. 18. 483rd ant. 18. 484th ant. 18. 485th ant. 18. 486th ant. 18. 487th ant. 18. 488th ant. 18. 489th ant. 18. 490th ant. 18. 491st ant. 18. 492nd ant. 18. 493rd ant. 18. 494th ant. 18. 495th ant. 18. 496th ant. 18. 497th ant. 18. 498th ant. 18. 499th ant. 18. 500th ant. 18. 501st ant. 18. 502nd ant. 18. 503rd ant. 18. 504th ant. 18. 505th ant. 18. 506th ant. 18. 507th ant. 18. 508th ant. 18. 509th ant. 18. 510th ant. 18. 511st ant. 18. 512nd ant. 18. 513rd ant. 18. 514th ant. 18. 515th ant. 18. 516th ant. 18. 517th ant. 18. 518th ant. 18. 519th ant. 18. 520th ant. 18. 521st ant. 18. 522nd ant. 18. 523rd ant. 18. 524th ant. 18. 525th ant. 18. 526th ant. 18. 527th ant. 18. 528th ant. 18. 529th ant. 18. 530th ant. 18. 531st ant. 18. 532nd ant. 18. 533rd ant. 18. 534th ant. 18. 535th ant. 18. 536th ant. 18. 537th ant. 18. 538th ant. 18. 539th ant. 18. 540th ant. 18. 541st ant. 18. 542nd ant. 18. 543rd ant. 18. 544th ant. 18. 545th ant. 18. 546th ant. 18. 547th ant. 18. 548th ant. 18. 549th ant. 18. 550th ant. 18. 551st ant. 18. 552nd ant. 18. 553rd ant. 18. 554th ant. 18. 555th ant. 18. 556th ant. 18. 557th ant. 18. 558th ant. 18. 559th ant. 18. 560th ant. 18. 561st ant. 18. 562nd ant. 18. 563rd ant. 18. 564th ant. 18. 565th ant. 18. 566th ant. 18. 567th ant. 18. 568th ant. 18. 569th ant. 18. 570th ant. 18. 571st ant. 18. 572nd ant. 18. 573rd ant. 18. 574th ant. 18. 575th ant. 18. 576th ant. 18. 577th ant. 18. 578th ant. 18. 579th ant. 18. 580th ant. 18. 581st ant. 18. 582nd ant. 18. 583rd ant. 18. 584th ant. 18. 585th ant. 18. 586th ant. 18. 587th ant. 18. 588th ant. 18. 589th ant. 18. 590th ant. 18. 591st ant. 18. 592nd ant. 18. 593rd ant. 18. 594th ant. 18. 595th ant

948

Green Noctuid on wild cherry, Platte Canon
Col. May 21, 1901. Hd $3\pm$ rounded, not lobed
erect, green, epistoma and bases of antennae
white. Body robust, 12 not enlarged, 13 taper-
ing robust, cylindrical. Clav green, a stripe
white d. line 3-15 granular. Diapause;
tubercles small white, skin minutely white
peppery, at the margin. Broken granular,
white; black & lat. fainter; sublat. narrow,
granular, feet yellow 2 anal fl. feet pale,
spiracles white, black marked finely
at base of spiracle. On green, dorsal
feet slightly extended backward, white line.
Plate white d. shade, top line yellow 2d obscure
Hatched May 25 1901 cat. no. 18568 *Agrotis torrida* Sm.

949

Noctuid on wild cherry, Platte Canon May
22, 1901. Hd $3\pm$ rounded, not lobed, erect, pale
green, epistoma and bases of antennae white.
Body robust, 12 not enlarged, 13 taper-
ing robust, cylindrical. Clav green, a stripe
white d. line 3-15 granular. Diapause;
tubercles small white, skin minutely white
peppery, at the margin. Broken granular,
white; black & lat. fainter; sublat. narrow,
granular, feet yellow 2 anal fl. feet pale,
spiracles white, black marked finely
at base of spiracle. On green, dorsal
feet slightly extended backward, white line.
Plate white d. shade, top line yellow 2d obscure
Hatched May 25 1901 cat. no. 18568 *Agrotis torrida* Sm.

Gilia sp

950

Noctuid egg on a steep road with many juniper leaves
and mixed hair stalks. Boulder Creek Canon, Col. May
22, 1901. Spheroidal pale yellow slightly shining.
About 18 low but rather steep ribs, diminishing in
intensity to micropyle; cross striae composed
of filled reticulations, micropyle area fine reticulate
2.7 h. 4 mm. Laid on young leaf & leaves.
Hatched May 25 Hd $3\pm$ rounded with pointed mouth,
erect, lobed black. Plate feet & tubercles black.
The latter moderate rounded, narrow for noctuidae.
Sublat. dark, stiff. Body cylindrical, rather robust
and stout, joint 12 very slightly enlarged, 13 small the
ends rather narrow not tapering. Dorsal
feet none at base of plate June 3 1901. Solitary
sitting on the stem in leaf.

Hd 2.5 R. R. Rounded, free but rather broad, slightly
lobed green, shining, faint reticulation, scales on
a white ground black, tubercles and antennae white.
Body cylindrical, rounded & slightly enlarged. Black
green fine reticulation dotted with white, a white
d. line white slip line white, green d. line
in the lower 2, 2 anal feet feet robust equal
rather small pale, sharper posterior. Dorsal
slightly darker, 12 below middle 17-9 at middle 10
1/2 h. 4 mm. Spiracles white, black ap. d.

Hd 1.6 Green; white d. & narrow 2d line and head
white slip. Tubercles small white. Feet 10 smaller
Hd 3.4 R. R. Rounded slightly lobed after a little more
2. Green as before but fainter reddish dorsal
Body all across but reddish shade on the
brown coat to the top. The d. & 2d lines can
be faintly marked among the markings but
they are faintly white.
(all these given in spots of faint effect)

954 (cont.)

Egg by ♀ 16911 Golden (near Summit) Col. June 20, 1901.
 Egg round, 2 sides flattened, wedge shaped,
 the long end thinnest. A small space, all
 without sharp angles. Usually hexagonally ret-
 iculate, the lines raised, broad, rounded, the
 spaces between flat hexagons rather regular.
 All pale yellow. $9 \times 6 \times 5$ mm.

Hatched June 23 at Grand Creek, Summit, Colorado. Larva very
 pale, black, small, brown. $4\frac{1}{2}$ mm. Body cylindrical, normal,
 short, egg with slight hump, body rather contracted, all brown.
 yellowish, the feet slender, jointed, feet not shining. No hairs.
 Tubercles small, black, minute. Setae slightly
 folded, whitish, feet pale normal, no markings.
 Setae very faint from white of lat. line, 12-13 and shaded
 with dull reddish.

June 24th 1st 7 mm. Head small, black, dark slightly lobed,
 pale pinkish flesh color. Body much like larva, thick
 uneven, a little depressed, uniform, minute. Tubercles
 slightly elevated, a little whitish, setae rather long
 black. Larva green, a few odd whitish lines, a
 few subdorsal whitish lines, green slender head, whitish
 and head whitish, setae slender black, shaded. Feet pale
 whitish, normal.
 Hatched June 25.

Another ♀ 17205 laid egg June 4. Hatched July 7.

951

Looper in wild cherry like *Alseophilus pomonaria*
 Blatte Canyon Col. May 1901. Larva green,
 white hind end, a few black marks. Larva
 had black hind feet in between red white line
 and black feet. Setae patches between the lat. &
 subdorsal white line. A white shade between red
 and lat., separated from sides by green space.
 Face of larva. Feet green, small, green on 9.
 Another all green with white lines.

Oct 20 1901. Contd. 18976

Alseophilus pomonaria Harr

(See life history, Insects XXVI, Insects ix 266)

Barberis repens (Harr)

952

#2 plant = *Barberis* sp.

Queen larvae solitary in fork of branch of tree, like
 like plant, Blatte Canyon Col. May 22. Larva
 flattened, the dorsal section rounded, the angular
 through refracting of body ends. All small, elongate
 held about flat, not broad, legs 3, rather slender &
 pinkish, mouthed on the lower end. Larva has long
 spits 4 and apertures with white & dark. The feet whitish
 somewhat mottled. Setae a type of setae, lat. & subdorsal
 Red distinct at 5-6, shaded nearly colorless, with
 contrasted. Setae green, dark blue yellowish brown.
 Pale yellow edges, a few irregular, a shaded faint
 cutting out white in highest green edged with near
 black tubercles. Setae black, slender, slightly shaded &
 yellowish brown. Feet normal, pale. Tubercles small
 black distinct, whitish ringed, 10 & 11 separate in a
 little dorsal. On 3 each approx. separate on 4, 11
 + 11, IV + V. Setae distinct, brownish. A few white
 dots lat. & subdorsal. Setae obscurely 63 annulate.
 Oct June 1 (1901). Lat. 16586-9

953

Butterflies on wild quince leaves near flower.
 Arnold's Creek Cañon May 23, 1901. Head black,
 thorax white. Black, white peppered
 or obscure, somewhat white dotted & brown
 with a without intensely gradate red
 blotches 2-12. a band pale S-V band
 black, somewhat yellowish white on rays.
 including spiracles. (see plate 952 for the
 structure (detail))

class 7 Col 11575 C. carlotta

done by NRC

[illegible]

T. larvae with 983 eating young birds and eating
downy. Chick captured before the birds
left the nest. slender. It rounded behind apex
beak & mouth projecting 1.25 mm black entire
usually brown; head brown, white, less diffuse
with 5-8, 11 with 1 hair somewhat approximate
in several hairs, a group of 5 hairs in 8-11 and
without much loss in hair part. in line about in
green deep: several hairs to vi

Chrysanthemum, green, a marked broad undistorted white eye
down along with 4 black dots per eye between
in a square keeping black blotches just. in pale
yellow black dots just dark granules: not
blackish, being. This part of black also part.
Hair white rounded granular tipped, soft
obscurely 2 smooth. Black impressed dot dot
in middle of seg. Spine among dead leaves.

955

Yellowing of leaves of leaflets. Boulder Creek Canon
 Col. May 23 1901. 1st round, petals white
 Pale intense yellow black. Cth whitish, monochrome
 Body slender, irregular form, whitish with
 brown bands as wide as interspaces, and leaf
 subat, with a point about 50. Petal 1st pale
 Tubercle minute, petals fine. Spines dark &
 faint broken, mid-ventral dark broad. Small
 fl. small, pale. 11 & 12 approximate, & dorsal
 Tubercle dark intense tubercle white.

(also a yellow flowered form Golden Col only in) *Thermopsis*
Ant June 26 1941 Cat 17095 *montana*
Helicopsis montana Zell

95.

Little larva hatched by covered from plates. Larva
all whitish with brown narrow brown st. plates
on 5-9 joined by a faint sd stripe of same color
Hd whitish, pal brown. legs somewhat annulate
cumulated. March. Larva black, black dot thorax
the tubercles annulate. Should read white.

Eubus deliciosus 957 #3 plant windens type
 Getting up leaves? rose-currant plant, Clattle Canyon
 May 15 1961. Normal winged. No shiny black, feet
 with long cilia yet black. a faint brown on face the
 shield brown except dark at border. Sides
 cylindrical feet short, segs irregular 3-annulate.
 Sordid brownish green, a cleaner d. 1 set line,
 tubercles round white distinct with coarse
 white setae 10-15. Spots? black ringed the feet
 black with pale joints also pale. Dorsal feet
 olivaceous shaded. 8 glands = 9 an olivaceous
 shade. Collected June 5 1961 Coll no 16537 = 900

958

Imm. on young rats. Clatter Canyon May 25, 1901
 Hd rounded, vertex blackish pale, reddish shaded
 broadly on lobes. W 1.2 mm. Red large for
 head, cylindrical moderate. Antennae 5-6 and
 these seg. swollen centrally, smooth. Tubercles
 rounded, black, distinct a little elevated with
 pointed black setae. Cth narrow transverse
 black composed of subsegment tubercles.
 Ocellus on face, the middle seg. pale red banded
 crosswise, a double d. & lat. greenish white
 smooth line; a broad white tubular line
 broken centrally on seg. Venter brownish shaded
 red and lat a blue seg. with dark purplish to
 color apex - lat cloud above iii and shading
 the dorsal space 10-12. The feet black - abd 4 is
 reddish ventrally, 9 is black lined and 1 pale.

959 *Cerocarpus* (Holland)

Leaf folder on #4 plant, hillside dotting bank.
 Clatter Canyon Cal. May 25 1901. Hd. Round to point a
 black lobes smooth whitish. Vertex blackish
 rounded unspined (but not) also maroon cal (Ocellus)
 greenish 1.2 mm rounded apex unspined - pale a 5 setae
 red-brown shaded reddish on middle, scales black.
 Body translucent soft green, not shining. Cth large
 pale broken. Black rounded joint. Tubercles large
 slender - lat elevated where it is - a gland
 large, dark group. Feet & setae pale. no marks
 Oct June 26 1901 Cal. 17094

T. 1902 *Spilargis* *males*

Don't trace *Xylocopa* *viridipennis* *males*
 (= *viridipennis* *males*) these stage 2.6 & 4.0 78
 in can Oct 26, 21, 1894. *males* common 5903
 960 *Marston* May 4 1891

With *Spilargis* on wild plum, Clatter Canyon May 25
 Hd. 6 rounded black, Cth spindle, black. Head
 rather thick, cylindrical. Antennae 12 scarcely
 enlarged, very widely whitish, almost gray
 with narrow whitish d. & lat line, the latter
 edging cth. Faint line along it and v. Tubercles
 round, elevated slightly black distinct marked
 by plate 1 and 11. black. Feet black, setae
 dusky short, tubercles forming pale ringed.

Hd 1.6 May 30 shiny black epistoma & bases ant.
 and white, cth black, fringed in white narrow
 Body greenish black pale mottled, d & lat line
 white distinct, ~~black~~ - slip broad, yellowish, tubercles
 centered, including spiracle & reaching to v, black
 edged. Tubercles black, round elevated, pointed
 feet black. Setae rather long, pale. Venter
 venter solid greenish purplish shaded.

Hd 2.5 June 4 shiny red brown epistoma & ant. white
 a black shade at eye. Body solid green, reaching to
 transparent thickly white dotted. D & lat line
 narrow white. Slip dark edged, greenish filled
 orange tinted. D. tubercles distinct, pointed black, in
 rather large, with narrow shade about it. The
 feet black. Ocellus yellowish when folded. Shaded
 green, conspicuous but dark white dotted, cth shiny
 with 3 white line. Setae rather long fine pale.

June 1901 Hd 3.6 shiny red-brown, pale in venter, not
 transparent. Transparent thin skin outspread by white
 dots, yellowish green fine fine. D & lat line faint
 nearly resolved into dots. Slip also faint, reaching
 into body, the orange shade about spiracle joining
 tubercles round black, whitish edged; setae
 rather long dusky. Eminent as before but less
 distinctly marked. (Have a variety of plants. *Sedalia*
 col.)

This *Xylocopa* associated

961

Opelid webbing hooded by Platte Canyon May 25
 Hd rounded bilobed oblique apex under 2, lobes
 with black sutures lines anterior, posterior
 white. Shaded between black at lab edges.
 Body slightly flattened cylindrical pale
 greenish white subopaque. Tubercles slender
 small setae pale no number. Tars. feet
 blackish at tip. ii+iv. Spines narrow
 brown edged. May 30 J. Idem June 8

962

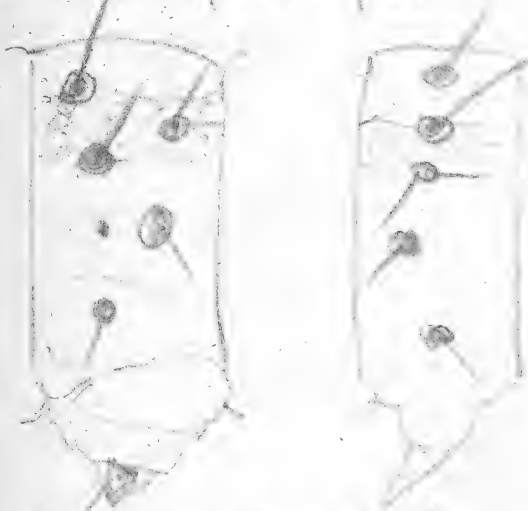
Opelid webbing up of a head in webbing
 Platte Canyon col. May 25 1901. Idem
 Hd shield and fl. box. Tubercles shiny black
 Body ant. white, a little yellowish shaded
 black tubercles. d. dorsal narrowly channel.
 Seg. 3-5 serrated. ii+iv, anal feet black.
 May 30 1.43 black as shaded tubercles. Body
 blackish shaded all over. Tubercles, 2 feet
 yellowish. Setae long pale.

Cont June 24 1901 Cat no 17013-8

Cecropia crassiorana Fitch

963

Stage I of Amesia multibasis a webbing Platte Canyon
 Col. May 25 1901



Amesia ii+iv, rest separate.

Hd bilobed shiny black.
 Body pale yellowish red
 tubercles & plates black.
 a broad marked purple
 sd band. Setae pointed
 black. Primary only.
 Body thick, intrans-
 parent, cylindrical not
 tapering. 10 tubercles
 spinous, 1 below the

Cecropia XXXV

[see before 951]

964

July 18 1901 Cat 1658

from June 4 before larvae
 from 952 plant with 10 (+ plant) Hd rounded
 bilobed full, pale red, cylindrical is mature as 12 are
 body cylindrical not tapering smooth. black
 shaded a shade red. d. space between bottom
 add. 1 sd. narrow lines. obscure dark line
 from big white line. iii-v. greenish. bottom
 filled, yellow about spiracle, a white line
 to anal foot. quarter narrowest dist. 10.
 Tubercles small round black feet black
 abd claspers reddish. Setae dark fine
 obscure not shining. May 30 Hd 2.0 orange
 shiny body white end. white smooth. Purple
 black, small thin lines. faint about; aty white
 enlarged a seg. 10. yellow at spinous bottom
 dist. centrally. Feet, except should 913 reddish
 Tubercles small black white line on foot 13

Helianthella *pinn* 965

Found in *Scaphium* webbing of head and feet
running long. Like single finger. 1st elongate $\frac{1}{2}$
under a black rather dull, 2 brownish. w 1 = mm
Body rounded, slender, incision distinct, rather
retracted, all black, the tubercles long, elevated
rounded all conspicuously white. Ringed, IV+V
the 1st-10+11, 12+13. Shields black, even, even.
the feet shining. abd. rounded, normal.

Dark green 14, 1901. Cx 16757

Copied for *Bunches Depressaria* paper
D. umbraticostella

966

Large Coleoptera found in *Scaphium*. Brown Col
July 28 1901. White of white with brown
leaf only in brown. Length 17 mm. (To Kew)

967

Catocala in paper. 74. Collins Col. May 1901
Hd rounded quadrately, lobed, a reddish brown
at base of eye like white. Ventrals retracted in
position from bedding face; smoothness good. W $3\frac{1}{2}$
Body flattened, feet large 7, 8 smaller, no fingers.
a low rounded d. bearing 9 between ii. light gray, like
Cottontail Mark, white, rather spread black
puffed and mixed with feet reddish d. white.
a brownish shading. Ventrals last in series 9-13 and
slight slight striate behind ii in 11 and 12
Tubercles rounded, elevated white, tip ii which
is somewhat longest in 12. The last feet are
brown lined. Spinules black, ringed.

Allium sp

968

Egg by 4 *Timpan* rose Sm. Cx 16839 May 29 1901
Egg resting head down on onion flower. Brown col.
Hemispherical, base flat, 28 \pm ventral ribs, low, rounded
terminating regularly by a transition at ridge 30 and
ending on microscopically forming a slightly depressant
rib, again a little elevated, retracted. Cross section
fairly but cell-areas slightly hollowed, a row on each
side, each ridge, the joining in hollow and on outer
ridges, which appear somewhat recessed. Facing white
2.8 \pm 4 mm

Hatched June 6 Hd rounded, lobed, mouth pointed, shiny
black; w 3 \pm cph black, raised at joint 8 and a little
as a 1 line joint. anal ft. faint, dark brown. Body
normal, white, no marks. Tubercles very small, with
midventral pointed setae black. This pair blackish ringed
abd. feet normal, exposed pale. (Not much spin. last)
Cranial Hd. 6 mm rounded brown black, Cx a plate dark
brown, body as white, somewhat the small tubercles
dark.

June 13 Hd. 9 pale yellow, lobed, rather, area about
eyes and joint marked, brown. Body all white, Cx a
little shiny and a slightly yellowish but gradually
concolorous. Tubercles minute, rather moderate dark
feet normal, spinules black, ringed fine, rather round
June 27 Hd 1.2 with Cx shining brown, 1st round, lobed
compact & smooth, the tubercles feet, ventral head
D. carbon high rising to a narrow triangle, shiny
dark brown, anterior 1 with 9 lobes feet blackish.
Cx long, 10 round, marked behind, shiny light
brown. The feet light brown. Body all of yellow white
the tubercles small brown with dark stop dark setae
last with 2 detached setae on lower side and on
shield. anal ft. shiny brown with dark tubercles
Spinules brown, rounded. Feet normal, the crochets
in a small half circle on inner side of 9. Tubercles
Tubercles in at lower corner of spinules.

(For Hampson Cx 267 Proal
IV.

1539 cont (from after 985) [Stage VI] Larva gradually tapered part, 13 chaetotaxy slender uniform. Tubercles a little elevated white, black rounded, is at middle of space. Rudiments of feet on 7-8, then on 9-13 narrow, abbreviated, ciliated seg. elongate. ~~1st~~ 1st 16 below? large round full wider & higher than 2 yet vertex narrowed in expanded end 12. m. within a little depressed, 5 more. white, smooth & little luster on each black dash is D. 3 brown bands on each side from occiput converging to D. black edged, filled with black & brown dots. Body slender, expanded, elongate, feet on 9, 10 & 13 with little rudiments on 7 & 8. Ground gray black 8d: 1st bands, many edges but a little undulate black edged, black dotted filled dorsal space brown, dorsal dotted on ash ground; a white space at 11 before white the ventral 2d band is whitish in brown; lat. sp. pale when first dotted is dull red; a pale space at 17; subdorsal like lat. sp. ventral space dotted & blackish, illy defining a 5th band, colored like the subdorsal tubercles dark gray, pale black dark. it at lower edge.

969

Long rainier in common Blue Sulphur. Fort Hills May 29 1901. A broad blotchy white along round of head below upper epidermis. a spots provided long. In brown young many cylindrical tubercles pale yellow the feet black-tipped. 1st very feet with broad dorsal 2, pencil, brown around the margins. Abd. feet short on 8-10 and 13. 5th smooth & dark brown, 8 faint shining yellow. Tubercles, color very minute. no tubercles, 2 a little oblique flattened & joining luster (see 16731)

970 *Argemone mexicana*

Opuntia webbing up and flying jockey Golden Sol May 29 1911. Head of leaf with open young stem. Pupate in folded leaf. The end better off. 1st 12 - head feet, 1st 12 - a shining black epidermis and bases of antennae white. Body slender, flexible, warty style tapering a little at the ends, occasionally flattened. legs short, annulate, crescent in appearance. 6th large black, narrowly besetted of pale, sparsely tubercles large, black. 2nd feet shining black, abd short narrow green, slightly dark shaded; anal plate small black. 1st 12 - tubercles small, numerous green, dorsal small narrow dark, so fold ligated when well folded no marks tubercles small, rather small, slightly elevated with black hair tubercles dark the plate concolorous with skin. IV + V, 16 + 17, 18 + 19 are above the other. Spiracles black, with pale center. 1st rather long dusky. Chas Jones Col. no. 16565

Platyphaca latipennis Zell

971

Wormwood, in row and with cherry, Golden, Cal.
May 27, 1901. Hds 1.1 black and purplish black no
markings. Spine all long equal, ① with some
lower branches 5-9, others in all black. Round
single of spine 12-15, and 1st bare. Spine 2-4, first large
Hds 2.3 Hgh, tubery, crowded, ① low, between improved
black, shiny, erect, free. Body cylindrical, covered
black purplish with faint black & white lines
the subventral ones distinct but all obscure.
Spine 2-4 bare, appearing, without tubercles.
Spine ① short 5-12 round & its branches long
thin, some half as long as the rest shorter ④.
② ③ all black. The whole dark on body. Same
as last - or as in 946 but a faint color
Red June 5 Hds 3. Black, above dorsum, white
as before. Some half of spine & all the spine
edge dorsally, like black. no marks.

Wormwood (Hd 4.5 & 2.0)

Another to illustrate July 14)

Albino, *Helminthogaster chactensis*, the yellow
and pink from *Helminthogaster chactensis*
& *Helminthogaster*.

972

Wormwood, Golden, May 30 1901. Hds 1.1
shiny black. Body translucent pale green, a little
erect. feet dark green. Tubercles round, small
slightly elevated. base 3-4 long on sides
blackish in black. The feet black and black.
normal. segs. normally annulate. setae rather
long, pale.

973

Wormwood, Golden, May 30 1901.
Hd, large shield, feet 1-2 black, other feet pale
all normal; body translucent, pale green, feet
dark, erect, tubers, other organs visible. Tubercles
small, pale, slightly elevated. no marks
Gestation white. W 1.3 ±

974

Wormwood in row, Golden, May 30 1901. Hds 3 1/2 mm. Round, erect, translucent
erect green, rather translucent; ① small.

Body cylindrical normal. Tubercles 12 a
little enlarged dorsally. Green, white on the
back a white dorsal narrow in the con-
colorous, dorsal on feet. ① feet none of dots
4 per seg. and ② tubercles subventral. Sub-
dorsal line white rather broad, sharp
edged from 2- foot 13. Tubercles white
and ii large, 1st at lower corner of spine
7-10, 1/2 at 11. Spine very normally dark
normal. Feet green, clasper pale.

(spine) 1st 1st

0-5

noctuid egg on rose-currant bush (H.S.) growing at Platte
canyon col. Desc. May 30 1901 4/3 of larva rounded
under base flat, pale yellow; 4/3 whitish, dimpling to
stomach which is a little elevated, tubercles all over
small, cross striate fine punctate D. 7 to 5 mm
Hatched May 31 rate 109 tubercles strong black, a little tubercle
between antennae, very fine. Body cylindrical noctuid
it a little enlarged on tubercles black, the fine white
dotted by black & plate black, feet normal. Body greenish
translucent. Tubercles round black with stiff dark setae
normal to head, 1st, 2nd, 3rd - 116 & 117 of thorax separate. Small
antennae with 4-5 segs. Larva moves & then shiny.
June 1st 1901 1st 5-6 tubercles between all on back & sides
black, at sides, feet pale greenish yellow, tubercles large
black, 1st broken into blackish spots. Larva feet
black, 2nd normal, 7-8 mm and 2 working though
not nearly straight. Plate dark, shaded. A little
enlarged but tubercles strong, green, erect. Setae fine pale
(over fine)

1.5 mm
Plate and July 5. 1st tubercles with long, whitish in dots
black, 1st & 2nd on back (tubercles 11 to 12, the
1st on back, 1st on back. Body smooth, uniform moderate
green, dark grey, with black & white dotted black plate
on a dark side - which is 1st in straight & more
distinct than the other with the dark tubercles 11 & 12 also
in, 1st line white, yellow behind behind, dorsal, 1st
line, narrow, and by 1st is white higher grey,
faint line in dark grey & narrow, the 1st line is
tubercles rounded, dorsal. Tubercles 2 black spots.
Head small reddish black, 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th, 101st, 102nd, 103rd, 104th, 105th, 106th, 107th, 108th, 109th, 110th, 111th, 112th, 113th, 114th, 115th, 116th, 117th, 118th, 119th, 120th, 121st, 122nd, 123rd, 124th, 125th, 126th, 127th, 128th, 129th, 130th, 131st, 132nd, 133rd, 134th, 135th, 136th, 137th, 138th, 139th, 140th, 141st, 142nd, 143rd, 144th, 145th, 146th, 147th, 148th, 149th, 150th, 151st, 152nd, 153rd, 154th, 155th, 156th, 157th, 158th, 159th, 160th, 161st, 162nd, 163rd, 164th, 165th, 166th, 167th, 168th, 169th, 170th, 171st, 172nd, 173rd, 174th, 175th, 176th, 177th, 178th, 179th, 180th, 181st, 182nd, 183rd, 184th, 185th, 186th, 187th, 188th, 189th, 190th, 191st, 192nd, 193rd, 194th, 195th, 196th, 197th, 198th, 199th, 200th, 201st, 202nd, 203rd, 204th, 205th, 206th, 207th, 208th, 209th, 210th, 211st, 212nd, 213th, 214th, 215th, 216th, 217th, 218th, 219th, 220th, 221st, 222nd, 223rd, 224th, 225th, 226th, 227th, 228th, 229th, 230th, 231st, 232nd, 233rd, 234th, 235th, 236th, 237th, 238th, 239th, 240th, 241st, 242nd, 243rd, 244th, 245th, 246th, 247th, 248th, 249th, 250th, 251st, 252nd, 253rd, 254th, 255th, 256th, 257th, 258th, 259th, 260th, 261st, 262nd, 263rd, 264th, 265th, 266th, 267th, 268th, 269th, 270th, 271st, 272nd, 273rd, 274th, 275th, 276th, 277th, 278th, 279th, 280th, 281st, 282nd, 283rd, 284th, 285th, 286th, 287th, 288th, 289th, 290th, 291st, 292nd, 293rd, 294th, 295th, 296th, 297th, 298th, 299th, 300th, 301st, 302nd, 303rd, 304th, 305th, 306th, 307th, 308th, 309th, 310th, 311st, 312nd, 313th, 314th, 315th, 316th, 317th, 318th, 319th, 320th, 321st, 322nd, 323rd, 324th, 325th, 326th, 327th, 328th, 329th, 330th, 331st, 332nd, 333rd, 334th, 335th, 336th, 337th, 338th, 339th, 340th, 341st, 342nd, 343rd, 344th, 345th, 346th, 347th, 348th, 349th, 350th, 351st, 352nd, 353rd, 354th, 355th, 356th, 357th, 358th, 359th, 360th, 361st, 362nd, 363rd, 364th, 365th, 366th, 367th, 368th, 369th, 370th, 371st, 372nd, 373rd, 374th, 375th, 376th, 377th, 378th, 379th, 380th, 381st, 382nd, 383rd, 384th, 385th, 386th, 387th, 388th, 389th, 390th, 391st, 392nd, 393rd, 394th, 395th, 396th, 397th, 398th, 399th, 400th, 401st, 402nd, 403rd, 404th, 405th, 406th, 407th, 408th, 409th, 410th, 411st, 412nd, 413th, 414th, 415th, 416th, 417th, 418th, 419th, 420th, 421st, 422nd, 423rd, 424th, 425th, 426th, 427th, 428th, 429th, 430th, 431st, 432nd, 433rd, 434th, 435th, 436th, 437th, 438th, 439th, 440th, 441st, 442nd, 443rd, 444th, 445th, 446th, 447th, 448th, 449th, 450th, 451st, 452nd, 453rd, 454th, 455th, 456th, 457th, 458th, 459th, 460th, 461st, 462nd, 463rd, 464th, 465th, 466th, 467th, 468th, 469th, 470th, 471st, 472nd, 473rd, 474th, 475th, 476th, 477th, 478th, 479th, 480th, 481st, 482nd, 483rd, 484th, 485th, 486th, 487th, 488th, 489th, 490th, 491st, 492nd, 493rd, 494th, 495th, 496th, 497th, 498th, 499th, 500th, 501st, 502nd, 503rd, 504th, 505th, 506th, 507th, 508th, 509th, 510th, 511st, 512nd, 513th, 514th, 515th, 516th, 517th, 518th, 519th, 520th, 521st, 522nd, 523rd, 524th, 525th, 526th, 527th, 528th, 529th, 530th, 531st, 532nd, 533rd, 534th, 535th, 536th, 537th, 538th, 539th, 540th, 541st, 542nd, 543rd, 544th, 545th, 546th, 547th, 548th, 549th, 550th, 551st, 552nd, 553rd, 554th, 555th, 556th, 557th, 558th, 559th, 560th, 561st, 562nd, 563rd, 564th, 565th, 566th, 567th, 568th, 569th, 570th, 571st, 572nd, 573rd, 574th, 575th, 576th, 577th, 578th, 579th, 580th, 581st, 582nd, 583rd, 584th, 585th, 586th, 587th, 588th, 589th, 590th, 591st, 592nd, 593rd, 594th, 595th, 596th, 597th, 598th, 599th, 600th, 601st, 602nd, 603rd, 604th, 605th, 606th, 607th, 608th, 609th, 610th, 611st, 612nd, 613th, 614th, 615th, 616th, 617th, 618th, 619th, 620th, 621st, 622nd, 623rd, 624th, 625th, 626th, 627th, 628th, 629th, 630th, 631st, 632nd, 633rd, 634th, 635th, 636th, 637th, 638th, 639th, 640th, 641st, 642nd, 643rd, 644th, 645th, 646th, 647th, 648th, 649th, 650th, 651st, 652nd, 653rd, 654th, 655th, 656th, 657th, 658th, 659th, 660th, 661st, 662nd, 663rd, 664th, 665th, 666th, 667th, 668th, 669th, 670th, 671st, 672nd, 673rd, 674th, 675th, 676th, 677th, 678th, 679th, 680th, 681st, 682nd, 683rd, 684th, 685th, 686th, 687th, 688th, 689th, 690th, 691st, 692nd, 693rd, 694th, 695th, 696th, 697th, 698th, 699th, 700th, 701st, 702nd, 703rd, 704th, 705th, 706th, 707th, 708th, 709th, 710th, 711st, 712nd, 713th, 714th, 715th, 716th, 717th, 718th, 719th, 720th, 721st, 722nd, 723rd, 724th, 725th, 726th, 727th, 728th, 729th, 730th, 731st, 732nd, 733rd, 734th, 735th, 736th, 737th, 738th, 739th, 740th, 741st, 742nd, 743rd, 744th, 745th, 746th, 747th, 748th, 749th, 750th, 751st, 752nd, 753rd, 754th, 755th, 756th, 757th, 758th, 759th, 760th, 761st, 762nd, 763rd, 764th, 765th, 766th, 767th, 768th, 769th, 770th, 771st, 772nd, 773rd, 774th, 775th, 776th, 777th, 778th, 779th, 780th, 781st, 782nd, 783rd, 784th, 785th, 786th, 787th, 788th, 789th, 790th, 791st, 792nd, 793rd, 794th, 795th, 796th, 797th, 798th, 799th, 800th, 801st, 802nd, 803rd, 804th, 805th, 806th, 807th, 808th, 809th, 810th, 811st, 812nd, 813th, 814th, 815th, 816th, 817th, 818th, 819th, 820th, 821st, 822nd, 823rd, 824th, 825th, 826th, 827th, 828th, 829th, 830th, 831st, 832nd, 833rd, 834th, 835th, 836th, 837th, 838th, 839th, 840th, 841st, 842nd, 843rd, 844th, 845th, 846th, 847th, 848th, 849th, 850th, 851st, 852nd, 853rd, 854th, 855th, 856th, 857th, 858th, 859th, 860th, 861st, 862nd, 863rd, 864th, 865th, 866th, 867th, 868th, 869th, 870th, 871st, 872nd, 873rd, 874th, 875th, 876th, 877th, 878th, 879th, 880th, 881st, 882nd, 883rd, 884th, 885th, 886th, 887th, 888th, 889th, 890th, 891st, 892nd, 893rd, 894th, 895th, 896th, 897th, 898th, 899th, 900th, 901st, 902nd, 903rd, 904th, 905th, 906th, 907th, 908th, 909th, 910th, 911st, 912nd, 913th, 914th, 915th, 916th, 917th, 918th, 919th, 920th, 921st, 922nd, 923rd, 924th, 925th, 926th, 927th, 928th, 929th, 930th, 931st, 932nd, 933rd, 934th, 935th, 936th, 937th, 938th, 939th, 940th, 941st, 942nd, 943rd, 944th, 945th, 946th, 947th, 948th, 949th, 950th, 951st, 952nd, 953rd, 954th, 955th, 956th, 957th, 958th, 959th, 960th, 961st, 962nd, 963rd, 964th, 965th, 966th, 967th, 968th, 969th, 970th, 971st, 972nd, 973rd, 974th, 975th, 976th, 977th, 978th, 979th, 980th, 981st, 982nd, 983rd, 984th, 985th, 986th, 987th, 988th, 989th, 990th, 991st, 992nd, 993rd, 994th, 995th, 996th, 997th, 998th, 999th, 1000th, 1001st, 1002nd, 1003rd, 1004th, 1005th, 1006th, 1007th, 1008th, 1009th, 1010th, 1011st, 1012nd, 1013th, 1014th, 1015th, 1016th, 1017th, 1018th, 1019th, 1020th, 1021st, 1022nd, 1023rd, 1024th, 1025th, 1026th, 1027th, 1028th, 1029th, 1030th, 1031st, 1032nd, 1033rd, 1034th, 1035th, 1036th, 1037th, 1038th, 1039th, 1040th, 1041st, 1042nd, 1043rd, 1044th, 1045th, 1046th, 1047th, 1048th, 1049th, 1050th, 1051st, 1052nd, 1053rd, 1054th, 1055th, 1056th, 1057th, 1058th, 1059th, 1060th, 1061st, 1062nd, 1063rd, 1064th, 1065th, 1066th, 1067th, 1068th, 1069th, 1070th, 1071st, 1072nd, 1073rd, 1074th, 1075th, 1076th, 1077th, 1078th, 1079th, 1080th, 1081st, 1082nd, 1083rd, 1084th, 1085th, 1086th, 1087th, 1088th, 1089th, 1090th, 1091st, 1092nd, 1093rd, 1094th, 1095th, 1096th, 1097th, 1098th, 1099th, 1100th, 1101st, 1102nd, 1103rd, 1104th, 1105th, 1106th, 1107th, 1108th, 1109th, 1110th, 1111st, 1112nd, 1113th, 1114th, 1115th, 1116th, 1117th, 1118th, 1119th, 1120th, 1121st, 1122nd, 1123rd, 1124th, 1125th, 1126th, 1127th, 1128th, 1129th, 1130th, 1131st, 1132nd, 1133rd, 1134th, 1135th, 1136th, 1137th, 1138th, 1139th, 1140th, 1141st, 1142nd, 1143rd, 1144th, 1145th, 1146th, 1147th, 1148th, 1149th, 1150th, 1151st, 1152nd, 1153rd, 1154th, 1155th, 1156th, 1157th, 1158th, 1159th, 1160th, 1161st, 1162nd, 1163rd, 1164th, 1165th, 1166th, 1167th, 1168th, 1169th, 1170th, 1171st, 1172nd, 1173rd, 1174th, 1175th, 1176th, 1177th, 1178th, 1179th, 1180th, 1181st, 1182nd, 1183rd, 1184th, 1185th, 1186th, 1187th, 1188th, 1189th, 1190th, 1191st, 1192nd, 1193rd, 1194th, 1195th, 1196th, 1197th, 1198th, 1199th, 1200th, 1201st, 1202nd, 1203rd, 1204th, 1205th, 1206th, 1207th, 1208th, 1209th, 1210th, 1211st, 1212nd, 1213th, 1214th, 1215th, 1216th, 1217th, 1218th, 1219th, 1220th, 1221st, 1222nd, 1223rd, 1224th, 1225th, 1226th, 1227th, 1228th, 1229th, 1230th, 1231st, 1232nd, 1233rd, 1234th, 1235th, 1236th, 1237th, 1238th, 1239th, 1240th, 1241st, 1242nd, 1243rd, 1244th, 1245th, 1246th, 1247th, 1248th, 1249th, 1250th, 1251st, 1252nd, 1253rd, 1254th, 1255th, 1256th, 1257th, 1258th, 1259th, 1260th, 1261st, 1262nd, 1263rd, 1264th, 1265th, 1266th, 1267th, 1268th, 1269th, 1270th, 1271st, 1272nd, 1273rd, 1274th, 1275th, 1276th, 1277th, 1278th, 1279th, 1280th, 1281st, 1282nd, 1283rd, 1284th, 1285th, 1286th, 1287th, 1288th, 1289th, 1290th, 1291st, 1292nd, 1293rd, 1294th, 1295th, 1296th, 1297th, 1298th, 1299th, 1300th, 1301st, 1302nd, 1303rd, 1304th, 1305th, 1306th, 1307th, 1308th, 1309th, 1310th, 1311st, 1312nd, 1313th, 1314th, 1315th, 1316th, 1317th, 1318th, 1319th, 1320th, 1321st, 1322nd, 1323rd, 1324th, 1325th, 1326th, 1327th, 1328th, 1329th, 1330th, 1331st, 1332nd, 1333rd, 1334th, 1335th, 1336th, 1337th, 1338th, 1339th, 1340th, 1341st, 1342nd, 1343rd, 1344th, 1345th, 1346th, 1347th, 1348th, 1349th, 1350th, 1351st, 1352nd, 1353rd, 1354th, 1355th, 1356th, 1357th, 1358th, 1359th, 1360th, 1361st, 1362nd, 1363rd, 1364th, 1365th, 1366th, 1367th, 1368th, 1369th, 1370th, 1371st, 1372nd, 1373rd, 1374th, 1375th, 1376th, 1377th, 1378th, 1379th, 1380th, 1381st, 1382nd, 1383rd, 1384th, 1385th, 1386th, 1387th, 1388th, 1389th, 1390th, 1391st, 1392nd, 1393rd, 1394th, 1395th, 1396th, 1397th, 1398th, 1399th, 1400th, 1401st, 1402nd, 1403rd, 1404th, 1405th, 1406th, 1407th, 1408th, 1409th, 1410th, 1411st, 1412nd, 1413th, 1414th, 1415th, 1416th, 1417th, 1418th, 1419th, 1420th, 1421st, 1422nd, 1423rd, 1424th, 1425th, 1426th, 1427th, 1428th, 1429th, 1430th, 1431st, 1432nd, 1433rd, 1434th, 1435th, 1436th, 1437th, 1438th, 1439th, 1440th, 1441st, 1442nd, 1443rd, 1444th, 1445th, 1446th, 1447th, 1448th, 1449th, 1450th, 1451st, 1452nd, 1453rd, 1454th, 1455th, 1456th, 1457th, 1458th, 1459th, 1460th, 1461st, 1462nd, 1463rd, 1464th, 1465th, 1466th, 1467th, 1468th, 1469th, 1470th, 1471st, 1472nd, 1473rd, 1474th, 1475th, 1476th, 1477th, 1478th, 1479th, 1480th, 1481st, 1482nd, 1483rd, 1484th, 1485th, 1486th, 1487th, 1488th, 1489th, 1490th, 1491st, 1492nd, 1493rd, 1494th, 1495th, 1496th, 1497th, 1498th, 1499th, 1500th, 1501st, 1502nd, 1503rd, 1504th, 1505th, 1506th, 1507th, 1508th, 1509th, 1510th, 1511st, 1512nd, 1513th, 1514th, 1515th, 1516th, 1517th, 1518th, 1519th, 1520th, 1521st, 1522nd, 1523rd, 1524th, 1525th, 1526th, 1527th, 1528th, 1529th, 1530th, 1531st, 1532nd, 1533rd, 1534th, 1535th, 1536th, 1537th, 1538th, 1539th, 1540th, 1541st, 1542nd, 1543rd, 1544th, 1545th, 1546th, 1547th, 1548th, 1549th, 1550th, 1551st, 1552nd, 1553rd, 1554th, 1555th, 1556th, 1557th, 1558th, 1559th, 1560th, 1561st, 1562nd, 1563rd, 1564th, 1565th, 1566th, 1567th, 1568th, 1569th, 1570th, 1571st, 1572nd, 1573rd, 1574th, 1575th, 1576th, 1577th, 1578th, 1579th, 1580th, 1581st, 1582nd, 1583rd, 1584th, 1585th, 1586th, 1587th, 1588th, 1589th, 1590th, 1591st, 1592nd, 1593rd, 1594th, 1595th, 1596th, 1597th, 1598th, 1599th, 1600th, 1601st, 1602nd, 1603rd, 1604th, 1605th, 1606th, 1607th, 1608th, 1609th, 1610th, 1611st, 1612nd, 1613th, 1614th, 1615th, 1616th, 1617th, 1618th, 1619th, 1620th, 1621st, 1622nd, 1623rd, 1624th, 1625th, 1626th, 1627th, 1628th, 1629th, 1630th, 1631st, 1632nd, 1633rd, 1634th, 1635th, 1636th, 1637th, 1638th, 1639th, 1640th, 1641st, 1642nd, 1643rd, 1644th, 1645th, 1646th, 1647th, 1648th, 1649th, 1650th, 1651st, 1652nd, 1653rd, 1654th, 1655th, 1656th, 1657th, 1658th, 1659th, 1660th, 1661st, 1662nd, 1663rd, 1664th, 1665th, 1666th, 1667th, 1668th, 1669th, 1670th, 1671st, 1672nd, 1673rd, 1674th, 1675th, 1676th, 1677th, 1678th, 1679th, 1680th, 1681st, 1682nd, 1683rd, 1684th, 1685th, 1686th, 1687th, 1688th, 1689th, 1690th, 1691st, 1692nd, 1693rd, 1694th, 1695th, 1696th, 1697th, 1698th, 1699th, 1700th, 1701st, 1702nd, 1703rd, 1704th, 1705th, 1706th, 1707th, 1708th, 1709th, 1710th, 1711st, 1712nd, 1713th, 1714th, 1715th, 1716th, 1717th, 1718th, 1719th, 1720th, 1721st, 1722nd, 1723rd, 1724th, 1725th, 1726th, 1727th, 1728th, 1729th, 1730th, 1731st, 1732nd, 1733rd, 1734th, 1735th, 1736th, 1737th, 1738th, 1739th, 1740th, 1741st, 1742nd, 1743rd, 1744th, 1745th, 1746th, 1747th, 1748th, 1749th, 1750th, 1751st, 1752nd, 1753rd, 1754th, 1755th, 1756th, 1757th, 1758th, 1759th, 1760th, 1761st, 1762nd, 1763rd, 1764th, 1765th, 1766th, 1767th, 1768th, 1769th, 1770th, 1771st, 1772nd, 1773rd, 1774th, 1775th, 1776th, 1777th, 1778th, 1779th, 1780th, 1781st, 1782nd, 1783rd, 1784th, 1785th, 1786th, 1787th, 1788th, 1789th, 1790th, 1791st, 1792nd, 1793rd, 1794th, 1795th, 1796th, 1797th, 1798th, 1799th, 1800th, 1801st, 1802nd, 1803rd, 1804th, 1805th, 1806th, 1807th, 1808th, 1809th, 1810th, 1811st, 1812nd, 1813th, 1814th, 1815th, 1816th, 1817th, 1818th, 1819th, 1820th, 1821st, 1822nd, 1823rd, 1824th, 1825th, 1826th, 1827th, 1828th, 18

912

Notched oak. (Glen Canyon, Col. June 1, 1901)
 Shed June 3 very deeply splitting, numerous of exposed.
 Body light green, translucent densely minutely
 clear granular. A white d. stripe and a narrow
 broken sd one; subdorsal from white narrow, all
 2-foot, but the green shield w/ faintly white
 lined. It is white, the rest green, obscure.
 Operacles fleshy, dark brownish. Hd broad, deeply
 lobed, flat before, white, a broad black
 band on the angle each side, irregular edged,
 meeting ventrally except for suture. Ocellus
 surrounded by brown. W 3 \pm clasper whitish.
 Ant June 10 1901 cat. 17338

Spirinoptera pleuroctena G. O.

913

Big green wiggles in places. Hd brown-brown operacle
 white, apex white. Ant all green, for slightly
 bluish on middle. 6th large green, narrow
 black around at ends and behind continuous
 Tubercles small slightly elevated. Antab 2 above
 the feet pale and very dark brown.
 Ant June 14 1901 Cat 16756

914 (221024)

Notched oak. (Glen Canyon, Col. June 1, 1901)
 Hd 2.8 mm. rounded bilobed, apex white & brown
 bearing reticulated with black edge in a long
 transverse patch on eye. Epistoma a black
 antennoal joint was white. Body elongated
 13 tapering, cylindrical, feet short, pale.

Brown shaded. Gray & black. 5th small, narrow
 in increase, a broken mottled d. band and a
 distinct sd one irregular about 1, composed of black
 mottling in gray. Filled between with red mottling
 on white. A broad pale lat. of later dorsal
 filling, narrowing centred with black mottling
 to black strip broad later sd, dilated centrally.
 Subdorsal band again pale like d filling, the 7th more
 dark, but not on dark as dorsal narrow.
 i-iv obscure, iv sd white & spines; v-vi large
 black. 7th slender whitish; operacle black with
 narrow long a pale.

Shed June 11 Hd 3.7 mm Same. The sd and lat
 black bands from joint 12-13 making anal joint
 all black, similar to above. On 11 a little
 white ant at c and before operacle.
 Ant June 20 1902 Cat no 18089

Spirinoptera pleuroctena G. O.

986

Eggs by G. G. G. 16448 June 1 1901. Same col.
 nearly spherical, a little flattened on the base
 very slightly conical. Smooth shiny dull yellow
 with a greenish brownish tint. No dots or ribs
 the surface covered with slight shallow de-
 pressures, the edges ill defined. D. 8 mic.
 (1st stage) and also the middle hatched plant. 1
 very slender, slender, tapering, not very before
 hatching. No rounded, oblique, but not, dipping
 broad, rounded, nearly elliptical, 2 high, small
 black. Body cylindrical, slender, uniform, feet 12
 in 9, 13 & 13 rather long & well developed. White
 green from foot, a faint band around the middle
 band. Tubercles very small, black, obscure. Cth. brownish
 not very distinct, but except anal black. Later
 the lat. shade broken into 3 dotted lines
 1st lat. submarginally, then a white submarginally
 2nd faint brown line submarginally. 0 of white.
 (2nd stage) 15 Hatched, rounded, oblique, apex round, feet
 1 smooth, entire not depressed, 2 smooth, flattened
 3 dotted brown from on each lobe 1 = faint brown
 streak dividing 2 and 3. Body slender, long
 feet in 9, 12, 13 from 9 small, 10, 11, 12, 13, 14
 a pair of minute stalks in 7 & 8. Head white, a
 brown shaded, divided into 2 of shades, smaller central
 1st lat. from hatching, black dotted 1st lat. 2nd lat.
 submarginally, a 3rd brown line, not very sharp defined
 the 1st black, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th, 101st, 102nd, 103rd, 104th, 105th, 106th, 107th, 108th, 109th, 110th, 111th, 112th, 113th, 114th, 115th, 116th, 117th, 118th, 119th, 120th, 121st, 122nd, 123rd, 124th, 125th, 126th, 127th, 128th, 129th, 130th, 131st, 132nd, 133rd, 134th, 135th, 136th, 137th, 138th, 139th, 140th, 141st, 142nd, 143rd, 144th, 145th, 146th, 147th, 148th, 149th, 150th, 151st, 152nd, 153rd, 154th, 155th, 156th, 157th, 158th, 159th, 160th, 161st, 162nd, 163rd, 164th, 165th, 166th, 167th, 168th, 169th, 170th, 171st, 172nd, 173rd, 174th, 175th, 176th, 177th, 178th, 179th, 180th, 181st, 182nd, 183rd, 184th, 185th, 186th, 187th, 188th, 189th, 190th, 191st, 192nd, 193rd, 194th, 195th, 196th, 197th, 198th, 199th, 200th, 201st, 202nd, 203rd, 204th, 205th, 206th, 207th, 208th, 209th, 210th, 211st, 212nd, 213th, 214th, 215th, 216th, 217th, 218th, 219th, 220th, 221st, 222nd, 223rd, 224th, 225th, 226th, 227th, 228th, 229th, 230th, 231st, 232nd, 233rd, 234th, 235th, 236th, 237th, 238th, 239th, 240th, 241st, 242nd, 243rd, 244th, 245th, 246th, 247th, 248th, 249th, 250th, 251st, 252nd, 253rd, 254th, 255th, 256th, 257th, 258th, 259th, 260th, 261st, 262nd, 263rd, 264th, 265th, 266th, 267th, 268th, 269th, 270th, 271st, 272nd, 273rd, 274th, 275th, 276th, 277th, 278th, 279th, 280th, 281st, 282nd, 283rd, 284th, 285th, 286th, 287th, 288th, 289th, 290th, 291st, 292nd, 293rd, 294th, 295th, 296th, 297th, 298th, 299th, 300th, 301st, 302nd, 303rd, 304th, 305th, 306th, 307th, 308th, 309th, 310th, 311st, 312nd, 313th, 314th, 315th, 316th, 317th, 318th, 319th, 320th, 321st, 322nd, 323rd, 324th, 325th, 326th, 327th, 328th, 329th, 330th, 331st, 332nd, 333rd, 334th, 335th, 336th, 337th, 338th, 339th, 340th, 341st, 342nd, 343rd, 344th, 345th, 346th, 347th, 348th, 349th, 350th, 351st, 352nd, 353rd, 354th, 355th, 356th, 357th, 358th, 359th, 360th, 361st, 362nd, 363rd, 364th, 365th, 366th, 367th, 368th, 369th, 370th, 371st, 372nd, 373rd, 374th, 375th, 376th, 377th, 378th, 379th, 380th, 381st, 382nd, 383rd, 384th, 385th, 386th, 387th, 388th, 389th, 390th, 391st, 392nd, 393rd, 394th, 395th, 396th, 397th, 398th, 399th, 400th, 401st, 402nd, 403rd, 404th, 405th, 406th, 407th, 408th, 409th, 410th, 411st, 412nd, 413th, 414th, 415th, 416th, 417th, 418th, 419th, 420th, 421st, 422nd, 423rd, 424th, 425th, 426th, 427th, 428th, 429th, 430th, 431st, 432nd, 433rd, 434th, 435th, 436th, 437th, 438th, 439th, 440th, 441st, 442nd, 443rd, 444th, 445th, 446th, 447th, 448th, 449th, 450th, 451st, 452nd, 453rd, 454th, 455th, 456th, 457th, 458th, 459th, 460th, 461st, 462nd, 463rd, 464th, 465th, 466th, 467th, 468th, 469th, 470th, 471st, 472nd, 473rd, 474th, 475th, 476th, 477th, 478th, 479th, 480th, 481st, 482nd, 483rd, 484th, 485th, 486th, 487th, 488th, 489th, 490th, 491st, 492nd, 493rd, 494th, 495th, 496th, 497th, 498th, 499th, 500th, 501st, 502nd, 503rd, 504th, 505th, 506th, 507th, 508th, 509th, 510th, 511st, 512nd, 513th, 514th, 515th, 516th, 517th, 518th, 519th, 520th, 521st, 522nd, 523rd, 524th, 525th, 526th, 527th, 528th, 529th, 530th, 531st, 532nd, 533rd, 534th, 535th, 536th, 537th, 538th, 539th, 540th, 541st, 542nd, 543rd, 544th, 545th, 546th, 547th, 548th, 549th, 550th, 551st, 552nd, 553rd, 554th, 555th, 556th, 557th, 558th, 559th, 560th, 561st, 562nd, 563rd, 564th, 565th, 566th, 567th, 568th, 569th, 570th, 571st, 572nd, 573rd, 574th, 575th, 576th, 577th, 578th, 579th, 580th, 581st, 582nd, 583rd, 584th, 585th, 586th, 587th, 588th, 589th, 590th, 591st, 592nd, 593rd, 594th, 595th, 596th, 597th, 598th, 599th, 600th, 601st, 602nd, 603rd, 604th, 605th, 606th, 607th, 608th, 609th, 610th, 611st, 612nd, 613th, 614th, 615th, 616th, 617th, 618th, 619th, 620th, 621st, 622nd, 623rd, 624th, 625th, 626th, 627th, 628th, 629th, 630th, 631st, 632nd, 633rd, 634th, 635th, 636th, 637th, 638th, 639th, 640th, 641st, 642nd, 643rd, 644th, 645th, 646th, 647th, 648th, 649th, 650th, 651st, 652nd, 653rd, 654th, 655th, 656th, 657th, 658th, 659th, 660th, 661st, 662nd, 663rd, 664th, 665th, 666th, 667th, 668th, 669th, 670th, 671st, 672nd, 673rd, 674th, 675th, 676th, 677th, 678th, 679th, 680th, 681st, 682nd, 683rd, 684th, 685th, 686th, 687th, 688th, 689th, 690th, 691st, 692nd, 693rd, 694th, 695th, 696th, 697th, 698th, 699th, 700th, 701st, 702nd, 703rd, 704th, 705th, 706th, 707th, 708th, 709th, 710th, 711st, 712nd, 713th, 714th, 715th, 716th, 717th, 718th, 719th, 720th, 721st, 722nd, 723rd, 724th, 725th, 726th, 727th, 728th, 729th, 730th, 731st, 732nd, 733rd, 734th, 735th, 736th, 737th, 738th, 739th, 740th, 741st, 742nd, 743rd, 744th, 745th, 746th, 747th, 748th, 749th, 750th, 751st, 752nd, 753rd, 754th, 755th, 756th, 757th, 758th, 759th, 760th, 761st, 762nd, 763rd, 764th, 765th, 766th, 767th, 768th, 769th, 770th, 771st, 772nd, 773rd, 774th, 775th, 776th, 777th, 778th, 779th, 780th, 781st, 782nd, 783rd, 784th, 785th, 786th, 787th, 788th, 789th, 790th, 791st, 792nd, 793rd, 794th, 795th, 796th, 797th, 798th, 799th, 800th, 801st, 802nd, 803rd, 804th, 805th, 806th, 807th, 808th, 809th, 810th, 811st, 812nd, 813th, 814th, 815th, 816th, 817th, 818th, 819th, 820th, 821st, 822nd, 823rd, 824th, 825th, 826th, 827th, 828th, 829th, 830th, 831st, 832nd, 833rd, 834th, 835th, 836th, 837th, 838th, 839th, 840th, 841st, 842nd, 843rd, 844th, 845th, 846th, 847th, 848th, 849th, 850th, 851st, 852nd, 853rd, 854th, 855th, 856th, 857th, 858th, 859th, 860th, 861st, 862nd, 863rd, 864th, 865th, 866th, 867th, 868th, 869th, 870th, 871st, 872nd, 873rd, 874th, 875th, 876th, 877th, 878th, 879th, 880th, 881st, 882nd, 883rd, 884th, 885th, 886th, 887th, 888th, 889th, 890th, 891st, 892nd, 893rd, 894th, 895th, 896th, 897th, 898th, 899th, 900th, 901st, 902nd, 903rd, 904th, 905th, 906th, 907th, 908th, 909th, 910th, 911st, 912nd, 913th, 914th, 915th, 916th, 917th, 918th, 919th, 920th, 921st, 922nd, 923rd, 924th, 925th, 926th, 927th, 928th, 929th, 930th, 931st, 932nd, 933rd, 934th, 935th, 936th, 937th, 938th, 939th, 940th, 941st, 942nd, 943rd, 944th, 945th, 946th, 947th, 948th, 949th, 950th, 951st, 952nd, 953rd, 954th, 955th, 956th, 957th, 958th, 959th, 960th, 961st, 962nd, 963rd, 964th, 965th, 966th, 967th, 968th, 969th, 970th, 971st, 972nd, 973rd, 974th, 975th, 976th, 977th, 978th, 979th, 980th, 981st, 982nd, 983rd, 984th, 985th, 986th, 987th, 988th, 989th, 990th, 991st, 992nd, 993rd, 994th, 995th, 996th, 997th, 998th, 999th, 1000th, 1001st, 1002nd, 1003rd, 1004th, 1005th, 1006th, 1007th, 1008th, 1009th, 1010th, 1011st, 1012nd, 1013th, 1014th, 1015th, 1016th, 1017th, 1018th, 1019th, 1020th, 1021st, 1022nd, 1023rd, 1024th, 1025th, 1026th, 1027th, 1028th, 1029th, 1030th, 1031st, 1032nd, 1033rd, 1034th, 1035th, 1036th, 1037th, 1038th, 1039th, 1040th, 1041st, 1042nd, 1043rd, 1044th, 1045th, 1046th, 1047th, 1048th, 1049th, 1050th, 1051st, 1052nd, 1053rd, 1054th, 1055th, 1056th, 1057th, 1058th, 1059th, 1060th, 1061st, 1062nd, 1063rd, 1064th, 1065th, 1066th, 1067th, 1068th, 1069th, 1070th, 1071st, 1072nd, 1073rd, 1074th, 1075th, 1076th, 1077th, 1078th, 1079th, 1080th, 1081st, 1082nd, 1083rd, 1084th, 1085th, 1086th, 1087th, 1088th, 1089th, 1090th, 1091st, 1092nd, 1093rd, 1094th, 1095th, 1096th, 1097th, 1098th, 1099th, 1100th, 1101st, 1102nd, 1103rd, 1104th, 1105th, 1106th, 1107th, 1108th, 1109th, 1110th, 1111st, 1112nd, 1113th, 1114th, 1115th, 1116th, 1117th, 1118th, 1119th, 1120th, 1121st, 1122nd, 1123rd, 1124th, 1125th, 1126th, 1127th, 1128th, 1129th, 1130th, 1131st, 1132nd, 1133rd, 1134th, 1135th, 1136th, 1137th, 1138th, 1139th, 1140th, 1141st, 1142nd, 1143rd, 1144th, 1145th, 1146th, 1147th, 1148th, 1149th, 1150th, 1151st, 1152nd, 1153rd, 1154th, 1155th, 1156th, 1157th, 1158th, 1159th, 1160th, 1161st, 1162nd, 1163rd, 1164th, 1165th, 1166th, 1167th, 1168th, 1169th, 1170th, 1171st, 1172nd, 1173rd, 1174th, 1175th, 1176th, 1177th, 1178th, 1179th, 1180th, 1181st, 1182nd, 1183rd, 1184th, 1185th, 1186th, 1187th, 1188th, 1189th, 1190th, 1191st, 1192nd, 1193rd, 1194th, 1195th, 1196th, 1197th, 1198th, 1199th, 1200th, 1201st, 1202nd, 1203rd, 1204th, 1205th, 1206th, 1207th, 1208th, 1209th, 1210th, 1211st, 1212nd, 1213th, 1214th, 1215th, 1216th, 1217th, 1218th, 1219th, 1220th, 1221st, 1222nd, 1223rd, 1224th, 1225th, 1226th, 1227th, 1228th, 1229th, 1230th, 1231st, 1232nd, 1233rd, 1234th, 1235th, 1236th, 1237th, 1238th, 1239th, 1240th, 1241st, 1242nd, 1243rd, 1244th, 1245th, 1246th, 1247th, 1248th, 1249th, 1250th, 1251st, 1252nd, 1253rd, 1254th, 1255th, 1256th, 1257th, 1258th, 1259th, 1260th, 1261st, 1262nd, 1263rd, 1264th, 1265th, 1266th, 1267th, 1268th, 1269th, 1270th, 1271st, 1272nd, 1273rd, 1274th, 1275th, 1276th, 1277th, 1278th, 1279th, 1280th, 1281st, 1282nd, 1283rd, 1284th, 1285th, 1286th, 1287th, 1288th, 1289th, 1290th, 1291st, 1292nd, 1293rd, 1294th, 1295th, 1296th, 1297th, 1298th, 1299th, 1300th, 1301st, 1302nd, 1303rd, 1304th, 1305th, 1306th, 1307th, 1308th, 1309th, 1310th, 1311st, 1312nd, 1313th, 1314th, 1315th, 1316th, 1317th, 1318th, 1319th, 1320th, 1321st, 1322nd, 1323rd, 1324th, 1325th, 1326th, 1327th, 1328th, 1329th, 1330th, 1331st, 1332nd, 1333rd, 1334th, 1335th, 1336th, 1337th, 1338th, 1339th, 1340th, 1341st, 1342nd, 1343rd, 1344th, 1345th, 1346th, 1347th, 1348th, 1349th, 1350th, 1351st, 1352nd, 1353rd, 1354th, 1355th, 1356th, 1357th, 1358th, 1359th, 1360th, 1361st, 1362nd, 1363rd, 1364th, 1365th, 1366th, 1367th, 1368th, 1369th, 1370th, 1371st, 1372nd, 1373rd, 1374th, 1375th, 1376th, 1377th, 1378th, 1379th, 1380th, 1381st, 1382nd, 1383rd, 1384th, 1385th, 1386th, 1387th, 1388th, 1389th, 1390th, 1391st, 1392nd, 1393rd, 1394th, 1395th, 1396th, 1397th, 1398th, 1399th, 1400th, 1401st, 1402nd, 1403rd, 1404th, 1405th, 1406th, 1407th, 1408th, 1409th, 1410th, 1411st, 1412nd, 1413th, 1414th, 1415th, 1416th, 1417th, 1418th, 1419th, 1420th, 1421st, 1422nd, 1423rd, 1424th, 1425th, 1426th, 1427th, 1428th, 1429th, 1430th, 1431st, 1432nd, 1433rd, 1434th, 1435th, 1436th, 1437th, 1438th, 1439th, 1440th, 1441st, 1442nd, 1443rd, 1444th, 1445th, 1446th, 1447th, 1448th, 1449th, 1450th, 1451st, 1452nd, 1453rd, 1454th, 1455th, 1456th, 1457th, 1458th, 1459th, 1460th, 1461st, 1462nd, 1463rd, 1464th, 1465th, 1466th, 1467th, 1468th, 1469th, 1470th, 1471st, 1472nd, 1473rd, 1474th, 1475th, 1476th, 1477th, 1478th, 1479th, 1480th, 1481st, 1482nd, 1483rd, 1484th, 1485th, 1486th, 1487th, 1488th, 1489th, 1490th, 1491st, 1492nd, 1493rd, 1494th, 1495th, 1496th, 1497th, 1498th, 1499th, 1500th, 1501st, 1502nd, 1503rd, 1504th, 1505th, 1506th, 1507th, 1508th, 1509th, 1510th, 1511st, 1512nd, 1513th, 1514th, 1515th, 1516th, 1517th, 1518th, 1519th, 1520th, 1521st, 1522nd, 1523rd, 1524th, 1525th, 1526th, 1527th, 1528th, 1529th, 1530th, 1531st, 1532nd, 1533rd, 1534th, 1535th, 1536th, 1537th, 1538th, 1539th, 1540th, 1541st, 1542nd, 1543rd, 1544th, 1545th, 1546th, 1547th, 1548th, 1549th, 1550th, 1551st, 1552nd, 1553rd, 1554th, 1555th, 1556th, 1557th, 1558th, 1559th, 1560th, 1561st, 1562nd, 1563rd, 1564th, 1565th, 1566th, 1567th, 1568th, 1569th, 1570th, 1571st, 1572nd, 1573rd, 1574th, 1575th, 1576th, 1577th, 1578th, 1579th, 1580th, 1581st, 1582nd, 1583rd, 1584th, 1585th, 1586th, 1587th, 1588th, 1589th, 1590th, 1591st, 1592nd, 1593rd, 1594th, 1595th, 1596th, 1597th, 1598th, 1599th, 1600th, 1601st, 1602nd, 1603rd, 1604th, 1605th, 1606th, 1607th, 1608th, 1609th, 1610th, 1611st, 1612nd, 1613th, 1614th, 1615th, 1616th, 1617th, 1618th, 1619th, 1620th, 1621st, 1622nd, 1623rd, 1624th, 1625th, 1626th, 1627th, 1628th, 1629th, 1630th, 1631st, 1632nd, 1633rd, 1634th, 1635th, 1636th, 1637th, 1638th, 1639th, 1640th, 1641st, 1642nd, 1643rd, 1644th, 1645th, 1646th, 1647th, 1648th, 1649th, 1650th, 1651st, 1652nd, 1653rd, 1654th, 1655th, 1656th, 1657th, 1658th, 1659th, 1660th, 1661st, 1662nd, 1663rd, 1664th, 1665th, 1666th, 1667th, 1668th, 1669th, 1670th, 1671st, 1672nd, 1673rd, 1674th, 1675th, 1676th, 1677th, 1678th, 1679th, 1680th, 1681st, 1682nd, 1683rd, 1684th, 1685th, 1686th, 1687th, 1688th, 1689th, 1690th, 1691st, 1692nd, 1693rd, 1694th, 1695th, 1696th, 1697th, 1698th, 1699th, 1700th, 1701st, 1702nd, 1703rd, 1704th, 1705th, 1706th, 1707th, 1708th, 1709th, 1710th, 1711st, 1712nd, 1713th, 1714th, 1715th, 1716th, 1717th, 1718th, 1719th, 1720th, 1721st, 1722nd, 1723rd, 1724th, 1725th, 1726th, 1727th, 1728th, 1729th, 1730th, 1731st, 1732nd, 1733rd, 1734th, 1735th, 1736th, 1737th, 1738th, 1739th, 1740th, 1741st, 1742nd, 1743rd, 1744th, 1745th, 1746th, 1747th, 1748th, 1749th, 1750th, 1751st, 1752nd, 1753rd, 1754th, 1755th, 1756th, 1757th, 1758th, 1759th, 1760th, 1761st, 1762nd, 1763rd, 1764th, 1765th, 1766th, 1767th, 1768th, 1769th, 1770th, 1771st, 1772nd, 1773rd, 1774th, 1775th, 1776th, 1777th, 1778th, 1779th, 1780th, 1781st, 1782nd, 1783rd, 1784th, 1785th, 1786th, 1787th, 1788th, 1789th, 1790th, 1791st, 1792nd, 1793rd, 1794th, 1795th, 1796th, 1797th, 1798th, 1799th, 1800th, 1801st, 1802nd, 1803rd, 1804th, 1805th, 1806th, 1807th, 1808th, 1809th, 1810th, 1811st, 1812nd, 1813th, 1814th, 1815th, 1816th, 1817th, 1818th, 1819th, 1820th, 1821st, 1822nd, 1823rd, 1824th, 1825th, 1826th, 1827th, 1828th, 1829th, 1830th, 1831st, 1832nd, 1833rd, 1834th, 1835th, 1

996

Egg by G. Cooke 16524 Blatte Canyon Col, June 1-4 1901
 Elliptical 8 x 5. Pale brown, outer thick & arched,
 translucent slightly yellowish, reticulate obscure.
 Hatched June 11 Regular little Y below the ant. having
 shortened first seg. 11. not strongly alternating
 yet perceptibly so. Greenish translucent the ridge
 whitish. The mouth, etc. normal. 1st pair
 legs short, mouth brown in markings.

2nd June 18 Normal, tail, pedicel elongated, narrow, black,
 2nd space large & dark, 3rd small, ridges & lateral ridge
 almost imperceptible, granular edge around margin. Side
 whitish dark dark pedicel normal. All fairly white
 lateral ridge 7. 8. Space 1 granular white

3rd June 25 Elliptical pale, yellow 2d line reaching
 further back than ant. & curved not short crossing the
 1st line at yellow edge 7-8 pale rounded.

4th June 28 Pencil-like not short rounded & little large
 2nd space yellow 2d line not to ant. lateral leaf.

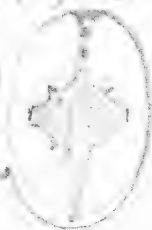
5th July 3 Patch covers 5 & 6 (1) and 7 rounded & high
 1st dark 2. Yellow line around 8 13 not with ant.

6th July 5 Patch decreased stage, very slight
 dots to head 2nd space, joining shaded to 7th

between yellow line. Patch on side to rounded 11 8

Later complete 3-13. Patches rounded (4) 7 and 8
 with little points forward (5) 6 and 9. Yellow line

fully marked 1st
 and 2nd beyond middle
 dark purple brown with
 of the pale middle space



Side longitudinal dist
 all very compact
 head & base

Spinning in leaf July 14

XXVIII

997

Egg by G. Cooke 16530 Anselmo Col, June 4 1901

Elliptical 10 x 6. Pale brown, translucent, outer a
 brown with sharp edges one end a little more
 rounded-pointed than the other. Surface
 perceptibly truncate & elevated. Smooth
 granular fine shining with small waves and
 some reticulation. 8 x 6 x .25 mm

Hatched June 11 (late with shiny & granular) 1st, rounded 11-
 lobed, not shiny yellowish ochraceous; w. 3 = 5 cells
 black, mouth brown. Body with a 1st point in 2 ant,
 the seg. slightly enlarged. Else smooth, enlarged &
 moderately elongate normal. Segs fairly rounded, ant. 10
 the incision not depressed. A slight rounded ob-
 elongation, most visible in 5 and 6 and 10. Greenish white
 a diffuse red-brown d. line, increasing to blackness at
 the end. Tubercles & setae very small and obscure the
 latter very short, black with enlarged tips. Skin smooth
 sheen and granular like the yellowish (normal) one (larva)

2nd June 18 1st lobed, the lobes produced into vertical
 conical horns, flat before, yellowish, granular with black
 Body cylindrical, uniform segs not increased, joint granular
 a slight elevated d. line. 2nd normal the 1st
 with large granular plates yellowish white lined with
 from the granular & d. line white. The anal plate
 pale edge 1 line brown 2 white, granular. 3rd
 2nd of segment, no marks no setae & tubercles and
 gl. pointed lateral

3rd June 25 3 strong, strongly lobed, oblong, pointed
 pale granular yellowish, granular. Body as before the
 1st is a smaller than 2nd lobes like 1st granular
 Body granular the 1st seg. 1st white normal 1st
 lobed w. a little point in segs. Pale whitish yellow
 with a diffuse brown dorsal band granular at the end
 anal pl. 1st seg. anal extended 1st with large plate
 4th June 28 1st 1st granular granular the 1st
 produced into a long granular yellowish, granular
 a little black in outer side of 1st seg. Body 25
 1st 1st yellowish green with a faint end

Differs from *S. lutea*, described as such, in several
 leaves before mature. Officers often heard of the
 granules. The long pointed and short spines
 the rather high and the short, I think from
 the 5-12. The fruit faintly reddish, almost
 red. *Malva* *lutea* granules the long and pointed lobes
 perfectly as far as $\frac{1}{2}$ length of head, which give a fine
 white and high from rounded with a fine blackish dot.
 The shades green, angular as joint with the head
 the cones in a smaller & narrower than head lobes
 not necessarily from lower rounded. Stems slightly
 yellowish between the stems slightly curved and
 from 9 granules with red from surface of lobes.
 And of granules into a cone behind, round at
 base. The fruit round, appeared and touching
 head as well as the whole looking like one piece
 of fruit from the head. I think from work
 5-12-13. The fruit round, almost all of fruit
 granules. Stems reddish. The fruit to touch
 from lobes in fine strands between leaves.
 with Apr 30 1906 Cal no. 18100

998 *Psoralea tenuifolia*

Colletes-like. legs on 3-5 leaves lupine, Golden Col
June 5 1901. uniform, 13 mm long. Rhynx of maxilla
tapering point. short ant. of white web covered
with grains of dirt (to smooth)
Swindon 998A from Glen and Col (Candell), all from
glens?? Ant Sept 24 1901. Cat 19066

999
With 981 were two when to J. Hunter, Tinted like
rather than Sarcophaga like. Grains heavily dotted
and leaving a distinct trail of a line. Hd. broader
anterior all about O, the ground and base of lobes
more or less black shaded. Subsequent flattened
Tubercles minute, setae moderate white 1st + 2
2nd removed about 4th setae long, white.
Ant. 12-14 Cat 17085 *Beloeus mercutella* 2-20

1950 Chrysothamnus sp.

Papilio. Like *Vestris* a (slight) slender
compositae. Golden color June 5 1901. Scint type
all alike. Hd 2.2 (5th) rounded blackened front face, white
anterior & d. a broad band from antennae to above d joint
by drooping to another band across tracks & lobes & body
black. Body greenish white with yellow - lined
d. sd (joints) and abd. yellow bands curiously
black banded. Irregular brown bands on legs.
One across i cii midline thin, joined by an arch (which
forms bar rounded apically lat); an irregular dark
one hind one & darker first one, enclosed with
a s.d spot. Irregular black markings on hind
on fore vi in a dorsal space. Feet unmarked
except. Tarsus faintly marked. It is more or
of spicula as before. In some the black is
joined in a s.d line. Total Hts 5.2 Same (patterns)
2-4-90 Oct. 1722] similar last year (first)

Archostephanus mra-wisi

1001

Taking better terminal leaves and eating and had
 a country like staff hope in foot hills Golden Cal
 June 5 1901. Hd. flag cotinuous, pale brown, green
 distinct luteous. Cyl. greenish brownish, pale
 body rather thick, slender, rounded whitish tubercles
 moderate, long, round, dusky, luteous, IV-V, 9-11
 10-12. Arch. Sept 11 1901 Cat 17056-7

1002

Green copper in the head (body of 95) 1/2 inch
 of slender, slender, pale, white. Body slender
 of pale green, translucent, up 1 inch
 tubercles slender, a little enlarged, pale
 and moderate, slender, slender, moderate
 large 10-12. Head all moderate, pale brown
 and moderate, slender, a little enlarged, pale
 and moderate.

Arch. June 27 1901 Cat 7102 Nephelodes coloradensis
 7000

1003

Hope in luteous top of chimney gulch, Golden Cal
 June 5 1901. Hd 2-3 1/2 inch, slender, dark, a little
 brownish, pale yellow, with 2 curved lateral lobes
 brownish yellow brown, no. 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494, 1495, 1496, 1497, 1498, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521, 1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546, 1547, 1548, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1626, 1627, 1628, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638, 1639, 1640, 1641, 1642, 1643, 1644, 1645, 1646, 1647, 1648, 1649, 1650, 1651, 1652, 1653, 1654, 1655, 1656, 1657, 1658, 1659, 1660, 1661, 1662, 1663, 1664, 1665, 1666, 1667, 1668, 1669, 1670, 1671, 1672, 1673, 1674, 1675, 1676, 1677, 1678, 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687, 1688, 1689, 1690, 1691, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1707, 1708, 1709, 1710, 1711, 1712, 1713, 1714, 1715, 1716, 1717, 1718, 1719, 1720, 1721, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729, 1730, 1731, 1732, 1733, 1734, 1735, 1736, 1737, 1738, 1739, 1740, 1741, 1742, 1743, 1744, 1745, 1746, 1747, 1748, 1749, 1750, 1751, 1752, 1753, 1754, 1755, 1756, 1757, 1758, 1759, 1760, 1761, 1762, 1763, 1764, 1765, 1766, 1767, 1768, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1776, 1777, 1778, 1779, 1780, 1781, 1782, 1783, 1784, 1785, 1786, 1787, 1788, 1789, 1790, 1791, 1792, 1793, 1794, 1795, 1796, 1797, 1798, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 21

1007

Worked in the open wetland-plant. Malle. Tarn
Col. June 7 1901. (Hd 1.5+ green speckled
with the black tubercles. Body rounded, 12
slightly enlarged, 13 small. Dark green d on
sd line from vertex to base. Slightly rather
narrow. Head white shading to yellow at the
increase. Rest white streak dotted. Tubercles
orange black white edged. Feet equal with
shoulder unobscured. June 11 (Hd 2.2) Same. Dorsal
line darker green edged. Slightly all white yellow
lateral faintly dotted. Head June 17 (Hd 3 mm
d white green finely dotted. eye i white patch
with no center. Under 2. Cephalic round &
slightly enlarged. White green minutely white
gray beaded. d sd brown brown white fine
black edged. Slightly white moderate black.
slightly pale yellow centered. Feet 1 should all
unobscured. 12 above middle 8-10. Tubercles white
black. Setae fine pale (Dead June 22)

Worked in woods! Golden (Kummit) Col., June
6 1901. Hd pale radial reticulation & brown
black young a second band each side. Body
rounded. Slightly, from gray with black at
d line and sd brownish black dorsal
band pale feet color black beaded. d line
nearly white brown dorsal, brown narrow
in increase with sd. Sd slightly shaded
darker black dorsal with 12 sharply about
on 13. edge below 1 small pale rounded white
sd. Abdomen broad pale slightly sharp edged band
mottled in concave, its white edge showing
so region unobscured, feet pale. Should not
confused. 11 at middle.

Aug 15 Set 17421

1009 *Lynceus borealis* St

Egg by 2 Noctuid 16586 laid about June 7 1901
Spherical, base slightly flattened, not slightly showing
yellowish white outermost, showing dotted, the pit
on vertical line becoming less conspicuous, rounded
subangular well depressed, then splined below the
band and too rounded to look like sets. No ribs,
the cross ridges as distinct as the vertical ones and
like them, irregularly hexagonal. D. 9 mm.
(Dented. seen infertile) Hatch June 15 (Hd 1.5+ rounded, slightly flattened, with black dots
& brown from the dorsal. Not much white the
first part, a brown tubercle on head below 1-2 and 14
indistinctly composed of 3 lines. Cephalic cloudy feet 1-9
10, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494, 1495, 1496, 1497, 1498, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521, 1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546, 1547, 1548, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1626, 1627, 1628, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638, 1639, 1640, 1641, 1642, 1643, 1644, 1645, 1646, 1647, 1648, 1649, 1650, 1651, 1652, 1653, 1654, 1655, 1656, 1657, 1658, 1659, 1660, 1661, 1662, 1663, 1664, 1665, 1666, 1667, 1668, 1669, 1670, 1671, 1672, 1673, 1674, 1675, 1676, 1677, 1678, 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687, 1688, 1689, 1690, 1691, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1707, 1708, 1709, 1710, 1711, 1712, 1713, 1714, 1715, 1716, 1717, 1718, 1719, 1720, 1721, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729, 1730, 1731, 1732, 1733, 1734, 1735, 1736, 1737, 1738, 1739, 1740, 1741, 1742, 1743, 1744, 1745, 1746, 1747, 1748, 1749, 1750, 1751, 1752, 1753, 1754, 1755, 1756, 1757, 1758, 1759, 1760, 1761, 1762, 1763, 1764, 1765, 1766, 1767, 1768, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1776, 1777, 1778, 1779, 1780, 1781, 1782, 1783, 1784, 1785, 1786, 1787, 1788, 1789, 1790, 1791, 1792, 1793, 1794, 1795, 1796, 1797, 1798, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095,

Does not agree with Schinwald's etc.
 Larva of *Ectophasia aculeatella* at all?

1016 *Acronycta palustris*

Striped leaf rollers on hill bush. Sedalia Col, June 18, 1901. Hd shiny black, apex 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

[The preceding (1015)]
 Mine on *discostigmella*, Schwarz on the plant near *discostigmella*

1017

Agrota in flower of blue lupine. Sedalia Col June 18, 1901. Head, green, soft, whitish, a fine dorsal line and faint whitish 1st oblique. No star glands seen, others dense whitish. To 1 hair tubercle blackish. Hd 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Popillia pennsylvanica 1018
 Larva on cottonwood. Denver June 17, 1901. Roll the leaf to several turns neatly. A narrow spiral with cross bands of silk transparent. End open can see through & see the larva in center. Several leaves involved. Hd rounded, flat, without water under 2, black, w hair with black outline. Body round, somewhat flattened, a little smaller at ends. Cep. slightly raised, dorsal black, blackish 1st & 2nd dorsal blackish 3rd whitish. Skin transparent white green feet first greenish yellow. D. dorsal dark tubercles moderate rounded, black, 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th. The feet black and normal sized. No spots. Out June 31 1901 at 17 37. *Agrota campbelli* (Buckley) cell

1019

Green Noctuid, probably *Acronycta pacifica* under cottonwood 3. Denver June 18, 1901. Hd greenish white, lobed, normal. Body Noctuid-like a little enlarged; green; d line white narrow fine edged; ad broken line dotted white. Subcostal narrow white below 2 & 12. Skin white dotted with center 9-10. Thorax whitish dead in pupa.

1020

Grasshopper wild cherry and hill bush. Sedalia Col. Hd 2.5" large, cordate, bilobed, erect free lips. Head 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245,

1021

Looper on flowers of Parsley (yellow flowered leaves divided leaf) Golden (Linn.) Col. June 20, 1901. Covered with bits of petals etc. Hd rounded over, brown full, fine but smaller than 2. White, silky, with small pebbles of stigmata and a few black dotted streaks. Red, finely, elevated and angular but projection as if feeding. Spiracles white. 2 seen what looked before, a double ed line and a 3rd large broad line. Spiracles white. 3rd narrow and blurry; as also 12, 13. Last 4 seen a 5-9 long to 1st. Green, skin purple, greenish tubercle 1 seta white; a raised add line - granules around spiracles. D. 1st in measure as stigmata, green dashed separated by white granules. (Linn.) See which in the study, tubercle, last probably iii 5, iv 6-9 and ii 12. Died in pupa.

1022

Stage I Agathis quercus x coladocum from off from Golden Colorado Spring, Colorado June 20, 1901. Hd. Having brown black, dark face with 1 seta. Body all brown and except the long brown shiny brown black etc. Fresh sign of red, enlarged tubercle, narrower than head 13 depressed. Setae 2^d, quite a curved line. Setae 4 curved many supernumerary little spiracles!! The feet pale brown, and narrow. See (Linn.)

1023 = 952

Anthem in Western plant Golden (Linn.) Col. June 19, 1901. Round and rounded, under brown and the surface of live black, antennae pale yellow. Body Anthera whitish, thickly flecked with purple black. D. 1st stigmata, creamy yellow, rays, rounded narrow black edged, whitish areas about iii - viii on rays apart between iii - iv. Vents black, i small ~~stigmata~~. Hair thin black, some whitish. June 28 Hd 2.0 seen, and black spotted a few of red. A vertex. Body dark grey, whitish dotted, a thin pale curved spot below iii & iv dull orange. Hair moderate blackish with a few large white ones. Vents dark, ii slightly bluish shining.

947 cont whitish across and in a streak each side and a stripe. Red curved, rather dark, with a little flattened, black, and shiny subangular. A granular white of line, slightly dotted - brown, irregular; a fine white line line ~~and~~ means to and being joined by obscure streaks to a broad white line on 5-6 feet, streaked on the annulations. Spiracles in white tubercles. A fine white dots iv. Feet dark, the old whitish streaked ventral, thin, pale joints. It slightly enlarged d. Setae short, black, rather strong. Head shiny, 1st to 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th, 101st, 102nd, 103rd, 104th, 105th, 106th, 107th, 108th, 109th, 110th, 111th, 112th, 113th, 114th, 115th, 116th, 117th, 118th, 119th, 120th, 121st, 122nd, 123rd, 124th, 125th, 126th, 127th, 128th, 129th, 130th, 131st, 132nd, 133rd, 134th, 135th, 136th, 137th, 138th, 139th, 140th, 141st, 142nd, 143rd, 144th, 145th, 146th, 147th, 148th, 149th, 150th, 151st, 152nd, 153rd, 154th, 155th, 156th, 157th, 158th, 159th, 160th, 161st, 162nd, 163rd, 164th, 165th, 166th, 167th, 168th, 169th, 170th, 171st, 172nd, 173rd, 174th, 175th, 176th, 177th, 178th, 179th, 180th, 181st, 182nd, 183rd, 184th, 185th, 186th, 187th, 188th, 189th, 190th, 191st, 192nd, 193rd, 194th, 195th, 196th, 197th, 198th, 199th, 200th, 201st, 202nd, 203rd, 204th, 205th, 206th, 207th, 208th, 209th, 210th, 211st, 212nd, 213th, 214th, 215th, 216th, 217th, 218th, 219th, 220th, 221st, 222nd, 223rd, 224th, 225th, 226th, 227th, 228th, 229th, 230th, 231st, 232nd, 233rd, 234th, 235th, 236th, 237th, 238th, 239th, 240th, 241st, 242nd, 243rd, 244th, 245th, 246th, 247th, 248th, 249th, 250th, 251st, 252nd, 253rd, 254th, 255th, 256th, 257th, 258th, 259th, 260th, 261st, 262nd, 263rd, 264th, 265th, 266th, 267th, 268th, 269th, 270th, 271st, 272nd, 273rd, 274th, 275th, 276th, 277th, 278th, 279th, 280th, 281st, 282nd, 283rd, 284th, 285th, 286th, 287th, 288th, 289th, 290th, 291st, 292nd, 293rd, 294th, 295th, 296th, 297th, 298th, 299th, 300th, 301st, 302nd, 303rd, 304th, 305th, 306th, 307th, 308th, 309th, 310th, 311st, 312nd, 313th, 314th, 315th, 316th, 317th, 318th, 319th, 320th, 321st, 322nd, 323rd, 324th, 325th, 326th, 327th, 328th, 329th, 330th, 331st, 332nd, 333rd, 334th, 335th, 336th, 337th, 338th, 339th, 340th, 341st, 342nd, 343rd, 344th, 345th, 346th, 347th, 348th, 349th, 350th, 351st, 352nd, 353rd, 354th, 355th, 356th, 357th, 358th, 359th, 360th, 361st, 362nd, 363rd, 364th, 365th, 366th, 367th, 368th, 369th, 370th, 371st, 372nd, 373rd, 374th, 375th, 376th, 377th, 378th, 379th, 380th, 381st, 382nd, 383rd, 384th, 385th, 386th, 387th, 388th, 389th, 390th, 391st, 392nd, 393rd, 394th, 395th, 396th, 397th, 398th, 399th, 400th, 401st, 402nd, 403rd, 404th, 405th, 406th, 407th, 408th, 409th, 410th, 411st, 412nd, 413th, 414th, 415th, 416th, 417th, 418th, 419th, 420th, 421st, 422nd, 423rd, 424th, 425th, 426th, 427th, 428th, 429th, 430th, 431st, 432nd, 433rd, 434th, 435th, 436th, 437th, 438th, 439th, 440th, 441st, 442nd, 443rd, 444th, 445th, 446th, 447th, 448th, 449th, 450th, 451st, 452nd, 453rd, 454th, 455th, 456th, 457th, 458th, 459th, 460th, 461st, 462nd, 463rd, 464th, 465th, 466th, 467th, 468th, 469th, 470th, 471st, 472nd, 473rd, 474th, 475th, 476th, 477th, 478th, 479th, 480th, 481st, 482nd, 483rd, 484th, 485th, 486th, 487th, 488th, 489th, 490th, 491st, 492nd, 493rd, 494th, 495th, 496th, 497th, 498th, 499th, 500th, 501st, 502nd, 503rd, 504th, 505th, 506th, 507th, 508th, 509th, 510th, 511st, 512nd, 513th, 514th, 515th, 516th, 517th, 518th, 519th, 520th, 521st, 522nd, 523rd, 524th, 525th, 526th, 527th, 528th, 529th, 530th, 531st, 532nd, 533rd, 534th, 535th, 536th, 537th, 538th, 539th, 540th, 541st, 542nd, 543rd, 544th, 545th, 546th, 547th, 548th, 549th, 550th, 551st, 552nd, 553rd, 554th, 555th, 556th, 557th, 558th, 559th, 560th, 561st, 562nd, 563rd, 564th, 565th, 566th, 567th, 568th, 569th, 570th, 571st, 572nd, 573rd, 574th, 575th, 576th, 577th, 578th, 579th, 580th, 581st, 582nd, 583rd, 584th, 585th, 586th, 587th, 588th, 589th, 590th, 591st, 592nd, 593rd, 594th, 595th, 596th, 597th, 598th, 599th, 600th, 601st, 602nd, 603rd, 604th, 605th, 606th, 607th, 608th, 609th, 610th, 611st, 612nd, 613th, 614th, 615th, 616th, 617th, 618th, 619th, 620th, 621st, 622nd, 623rd, 624th, 625th, 626th, 627th, 628th, 629th, 630th, 631st, 632nd, 633rd, 634th, 635th, 636th, 637th, 638th, 639th, 640th, 641st, 642nd, 643rd, 644th, 645th, 646th, 647th, 648th, 649th, 650th, 651st, 652nd, 653rd, 654th, 655th, 656th, 657th, 658th, 659th, 660th, 661st, 662nd, 663rd, 664th, 665th, 666th, 667th, 668th, 669th, 670th, 671st, 672nd, 673rd, 674th, 675th, 676th, 677th, 678th, 679th, 680th, 681st, 682nd, 683rd, 684th, 685th, 686th, 687th, 688th, 689th, 690th, 691st, 692nd, 693rd, 694th, 695th, 696th, 697th, 698th, 699th, 700th, 701st, 702nd, 703rd, 704th, 705th, 706th, 707th, 708th, 709th, 710th, 711st, 712nd, 713th, 714th, 715th, 716th, 717th, 718th, 719th, 720th, 721st, 722nd, 723rd, 724th, 725th, 726th, 727th, 728th, 729th, 730th, 731st, 732nd, 733rd, 734th, 735th, 736th, 737th, 738th, 739th, 740th, 741st, 742nd, 743rd, 744th, 745th, 746th, 747th, 748th, 749th, 750th, 751st, 752nd, 753rd, 754th, 755th, 756th, 757th, 758th, 759th, 760th, 761st, 762nd, 763rd, 764th, 765th, 766th, 767th, 768th, 769th, 770th, 771st, 772nd, 773rd, 774th, 775th, 776th, 777th, 778th, 779th, 780th, 781st, 782nd, 783rd, 784th, 785th, 786th, 787th, 788th, 789th, 790th, 791st, 792nd, 793rd, 794th, 795th, 796th, 797th, 798th, 799th, 800th, 801st, 802nd, 803rd, 804th, 805th, 806th, 807th, 808th, 809th, 810th, 811st, 812nd, 813th, 814th, 815th, 816th, 817th, 818th, 819th, 820th, 821st, 822nd, 823rd, 824th, 825th, 826th, 827th, 828th, 829th, 830th, 831st, 832nd, 833rd, 834th, 835th, 836th, 837th, 838th, 839th, 840th, 841st, 842nd, 843rd, 844th, 845th, 846th, 847th, 848th, 849th, 850th, 851st, 852nd, 853rd, 854th, 855th, 856th, 857th, 858th, 859th, 860th, 861st, 862nd, 863rd, 864th, 865th, 866th, 867th, 868th, 869th, 870th, 871st, 872nd, 873rd, 874th, 875th, 876th, 877th, 878th, 879th, 880th, 881st, 882nd, 883rd, 884th, 885th, 886th, 887th, 888th, 889th, 890th, 891st, 892nd, 893rd, 894th, 895th, 896th, 897th, 898th, 899th, 900th, 901st, 902nd, 903rd, 904th, 905th, 906th, 907th, 908th, 909th, 910th, 911st, 912nd, 913th, 914th, 915th, 916th, 917th, 918th, 919th, 920th, 921st, 922nd, 923rd, 924th, 925th, 926th, 927th, 928th, 929th, 930th, 931st, 932nd, 933rd, 934th, 935th, 936th, 937th, 938th, 939th, 940th, 941st, 942nd, 943rd, 944th, 945th, 946th, 947th, 948th, 949th, 950th, 951st, 952nd, 953rd, 954th, 955th, 956th, 957th, 958th, 959th, 960th, 961st, 962nd, 963rd, 964th, 965th, 966th, 967th, 968th, 969th, 970th, 971st, 972nd, 973rd, 974th, 975th, 976th, 977th, 978th, 979th, 980th, 981st, 982nd, 983rd, 984th, 985th, 986th, 987th, 988th, 989th, 990th, 991st, 992nd, 993rd, 994th, 995th, 996th, 997th, 998th, 999th, 1000th, 1001st, 1002nd, 1003rd, 1004th, 1005th, 1006th, 1007th, 1008th, 1009th, 1010th, 1011st, 1012nd, 1013th, 1014th, 1015th, 1016th, 1017th, 1018th, 1019th, 1020th, 1021st, 1022nd, 1023rd, 1024th, 1025th, 1026th, 1027th, 1028th, 1029th, 1030th, 1031st, 1032nd, 1033rd, 1034th, 1035th, 1036th, 1037th, 1038th, 1039th, 1040th, 1041st, 1042nd, 1043rd, 1044th, 1045th, 1046th, 1047th, 1048th, 1049th, 1050th, 1051st, 1052nd, 1053rd, 1054th, 1055th, 1056th, 1057th, 1058th, 1059th, 1060th, 1061st, 1062nd, 1063rd, 1064th, 1065th, 1066th, 1067th, 1068th, 1069th, 1070th, 1071st, 1072nd, 1073rd, 1074th, 1075th, 1076th, 1077th, 1078th, 1079th, 1080th, 1081st, 1082nd, 1083rd, 1084th, 1085th, 1086th, 1087th, 1088th, 1089th, 1090th, 1091st, 1092nd, 1093rd, 1094th, 1095th, 1096th, 1097th, 1098th, 1099th, 1100th, 1101st, 1102nd, 1103rd, 1104th, 1105th, 1106th, 1107th, 1108th, 1109th, 1110th, 1111st, 1112nd, 1113th, 1114th, 1115th, 1116th, 1117th, 1118th, 1119th, 1120th, 1121st, 1122nd, 1123rd, 1124th, 1125th, 1126th, 1127th, 1128th, 1129th, 1130th, 1131st, 1132nd, 1133rd, 1134th, 1135th, 1136th, 1137th, 1138th, 1139th, 1140th, 1141st, 1142nd, 1143rd, 1144th, 1145th, 1146th, 1147th, 1148th, 1149th, 1150th, 1151st, 1152nd, 1153rd, 1154th, 1155th, 1156th, 1157th, 1158th, 1159th, 1160th, 1161st, 1162nd, 1163rd, 1164th, 1165th, 1166th, 1167th, 1168th, 1169th, 1170th, 1171st, 1172nd, 1173rd, 1174th, 1175th, 1176th, 1177th, 1178th, 1179th, 1180th, 1181st, 1182nd, 1183rd, 1184th, 1185th, 1186th, 1187th, 1188th, 1189th, 1190th, 1191st, 1192nd, 1193rd, 1194th, 1195th, 1196th, 1197th, 1198th, 1199th, 1200th, 1201st, 1202nd, 1203rd, 1204th, 1205th, 1206th, 1207th, 1208th, 1209th, 1210th, 1211st, 1212nd, 1213th, 1214th, 1215th, 1216th, 1217th, 1218th, 1219th, 1220th, 1221st, 1222nd, 1223rd, 1224th, 1225th, 1226th, 1227th, 1228th, 1229th, 1230th, 1231st, 1232nd, 1233rd, 1234th, 1235th, 1236th, 1237th, 1238th, 1239th, 1240th, 1241st, 1242nd, 1243rd, 1244th, 1245th, 1246th, 1247th, 1248th, 1249th, 1250th, 1251st, 1252nd, 1253rd, 1254th, 1255th, 1256th, 1257th, 1258th, 1259th, 1260th, 1261st, 1262nd, 1263rd, 1264th, 1265th, 1266th, 1267th, 1268th, 1269th, 1270th, 1271st, 1272nd, 1273rd, 1274th, 1275th, 1276th, 1277th, 1278th, 1279th, 1280th, 1281st, 1282nd, 1283rd, 1284th, 1285th, 1286th, 1287th, 1288th, 1289th, 1290th, 1291st, 1292nd, 1293rd, 1294th, 1295th, 1296th, 1297th, 1298th, 1299th, 1300th, 1301st, 1302nd, 1303rd, 1304th, 1305th, 1306th, 1307th, 1308th, 1309th, 1310th, 1311st, 1312nd, 1313th, 1314th, 1315th, 1316th, 1317th, 1318th, 1319th, 1320th, 1321st, 1322nd, 1323rd, 1324th, 1325th, 1326th, 1327th, 1328th, 1329th, 1330th, 1331st, 1332nd, 1333rd, 1334th, 1335th, 1336th, 1337th, 1338th, 1339th, 1340th, 1341st, 1342nd, 1343rd, 1344th, 1345th, 1346th, 1347th, 1348th, 1349th, 1350th, 1351st, 1352nd, 1353rd, 1354th, 1355th, 1356th, 1357th, 1358th, 1359th, 1360th, 1361st, 1362nd, 1363rd, 1364th, 1365th, 1366th, 1367th, 1368th, 1369th, 1370th, 1371st, 1372nd, 1373rd, 1374th, 1375th, 1376th, 1377th, 1378th, 1379th, 1380th, 1381st, 1382nd, 1383rd, 1384th, 1385th, 1386th, 1387th, 1388th, 1389th, 1390th, 1391st, 1392nd, 1393rd, 1394th, 1395th, 1396th, 1397th, 1398th, 1399th, 1400th, 1401st, 1402nd, 1403rd, 1404th, 1405th, 1406th, 1407th, 1408th, 1409th, 1410th, 1411st, 1412nd, 1413th, 1414th, 1415th, 1416th, 1417th, 1418th, 1419th, 1420th, 1421st, 1422nd, 1423rd, 1424th, 1425th, 1426th, 1427th, 1428th, 1429th, 1430th, 1431st, 1432nd, 1433rd, 1434th, 1435th, 1436th, 1437th, 1438th, 1439th, 1440th, 1441st, 1442nd, 1443rd, 1444th, 1445th, 1446th, 1447th, 1448th, 1449th, 1450th, 1451st, 1452nd, 1453rd, 1454th, 1455th, 1456th, 1457th, 1458th, 1459th, 1460th, 1461st, 1462nd, 1463rd, 1464th, 1465th, 1466th, 1467th, 1468th, 1469th, 1470th, 1471st, 1472nd, 1473rd, 1474th, 1475th, 1476th, 1477th, 1478th, 1479th, 1480th, 1481st, 1482nd, 1483rd, 1484th, 1485th, 1486th, 1487th, 1488th, 1489th, 1490th, 1491st, 1492nd, 1493rd, 1494th, 1495th, 1496th, 1497th, 1498th, 1499th, 1500th, 1501st, 1502nd, 1503rd, 1504th, 1505th, 1506th, 1507th, 1508th, 1509th, 1510th, 1511st, 1512nd, 1513th, 1514th, 1515th, 1516th, 1517th, 1518th, 1519th, 1520th, 1521st, 1522nd, 1523rd, 1524th, 1525th, 1526th, 1527th, 1528th, 1529th, 1530th, 1531st, 1532nd, 1533rd, 1534th, 1535th, 1536th, 1537th, 1538th, 1539th, 1540th, 1541st, 1542nd, 1543rd, 1544th, 1545th, 1546th, 1547th, 1548th, 1549th, 1550th, 1551st, 1552nd, 1553rd, 1554th, 1555th, 1556th, 1557th, 1558th, 1559th, 1560th, 1561st, 1562nd, 1563rd, 1564th, 1565th, 1566th, 1567th, 1568th, 1569th, 1570th, 1571st, 1572nd, 1573rd, 1574th, 1575th, 1576th, 1577th, 1578th, 1579th, 1580th, 1581st, 1582nd, 1583rd, 1584th, 1585th, 1586th, 1587th, 1588th, 1589th, 1590th, 1591st, 1592nd, 1593rd, 1594th, 1595th, 1596th, 1597th, 1598th, 1599th, 1600th, 1601st, 1602nd, 1603rd, 1604th, 1605th, 1606th, 1607th, 1608th, 1609th, 1610th, 1611st, 1612nd, 1613th, 1614th, 1615th, 1616th, 1617th, 1618th, 1619th, 1620th, 1621st, 1622nd, 1623rd, 1624th, 1625th, 1626th, 1627th, 1628th, 1629th, 1630th, 1631st, 1632nd, 1633rd, 1634th, 1635th, 1636th, 1637th, 1638th, 1639th, 1640th, 1641st, 1642nd, 1643rd, 1644th, 1645th, 1646th, 1647th, 1648th, 1649th, 1650th, 1651st, 1652nd, 1653rd, 1654th, 1655th, 1656th, 1657th, 1658th, 1659th, 1660th, 1661st, 1662nd, 1663rd, 1664th, 1665th, 1666th, 1667th, 1668th, 1669th, 1670th, 1671st, 1672nd, 1673rd, 1674th, 1675th, 1676th, 1677th, 1678th, 1679th, 1680th, 1681st, 1682nd, 1683rd, 1684th, 1685th, 1686th, 1687th, 1688th, 1689th, 1690th, 1691st, 1692nd, 1693rd, 1694th, 1695th, 1696th, 1697th, 1698th, 1699th, 1700th, 1701st, 1702nd, 1703rd, 1704th, 1705th, 1706th, 1707th, 1708th, 1709th, 1710th, 1711st, 1712nd, 1713th, 1714th, 1715th, 1716th, 1717th, 1718th, 1719th, 1720th, 1721st, 1722nd, 1723rd, 1724th, 1725th, 1726th, 1727th, 1728th, 1729th, 1730th, 1731st, 1732nd, 1733rd, 1734th, 1735th, 1736th, 1737th, 1738th, 1739th, 1740th, 1741st, 1742nd, 1743rd, 1744th, 1745th, 1746th, 1747th, 1748th, 1749th, 1750th, 1751st, 1752nd, 1753rd, 1754th, 1755th, 1756th, 1757th, 1758th, 1759th, 1760th, 1761st, 1762nd, 1763rd, 1764th, 1765th, 1766th, 1767th, 1768th, 1769th, 1770th, 1771st, 1772nd, 1773rd, 1774th, 1775th, 1776th, 1777th, 1778th, 1779th, 1780th, 1781st, 1782nd, 1783rd, 1784th, 1785th, 17

1924 = 984

Woodland on oak, Sedalia Col. Dec. Jan 1901
 slender elongate. Feet on 9-8 small
 at wood hole above oblique but apex almost wide
 2, dark gray, heavily mottled red black in a
 white ground heavily a conspicuous white band
 on the face of each side. w 1.5 mm. Body whitish
 gray, silky shining. D. had like gray dotted banding
 at. slight undulant seg. centrally, subsegmental;
 Ed black waved, upward a line. Lat. on partly
 and 2 or like gray dotted confused subsegmental
 This feet black tipped abd. gray dotted tubercles
 a small black spot, ii 12-13 longer.
 June 30 3.1 same but ground pale brown, the feet
 black conspicuous fields white. D. space
 of the many black waves not band too gray
 more about its seg. divided, filled centrally
 with dark dotted mottling in a pale gray
 ground. Side feet gray dotted a dark band
 seen spread a 5-6, found of the rolling
 being darker. When long pale. Spines dark.
 The shape is slender, narrowing a little 10-13
 head feet rather large, not rounded 7-8 small
 12 very little enlarged. Phallos concolorous

Body black gray speckled, wood white. When d. line
 pale velvety edged. Spines whitish, slender gray, 115
 the feet black, abd. pale. No mottling line

Dead July 20 1902

1925

Arroyo 2? on willow Golden, clearing gulch
 Col. June 19 1901. Hd rounded lobed like the
 spire angled with prominent, translucent tubercles
 mostly a center, setae black, w 4 or less. Body
 cylindrical, incisures deep, 11 weak, narrow. Vents
 black, i with 5 hairs large, ii-v high hairs, smaller
 & smaller, vi absent; i 3 hairs on 13. On the 1st i 1
 with 3 hairs, ii a 11 & 12 separate in both, small, iii 4
 v absent, vi pale whitish, the feet green, heavily
 mottled shaded d. with red-brown on 2, 4-5, 8-9, 12
 Hair black, long, minutely branched. Feet rounded
 Aug 4 hairs from i 11 and ten 5, these pale, short.
 Cth divided into two large regions, each divided
 2-3 from 22 Hd rounded oblique between the wings and
 pinkish, smooth brown. Body cylindrical feet distinct rounded
 11 weak, 12 longer. Vents i-iii black, many hairs, i large &
 many in line than iv a single hair; v & vi long but pale
 not obscure. All sides on 11 & 13 pale. Translucent yellowish
 whitish, the large d. vent bearing abundant black hairs
 and with dark area around the vent esp. on 5, 8-9 and 12.
 5-6 hairs and feet pale no scales.
 May 24 Hd 8 blackish shaded brown white around base
 cool with 5. Body whitish, more thickly tufted a collar of tufts
 a 5, 2 distinct points on 12 and d. hairs 7-8 black.
 Feet mostly whitish. 2 and a last two dark brown a white
 shimm on 11. Feet and 13 pale.
 May 27 Hd 1.5 black a white streak on ground and a last
 and apical brownish. Tufts on 5 hairy, divided, on 12 old
 distinct black; on 6-7 whitish tufts on 8-9 just above of
 the many hairs 11. Hair of 3-4 whitish. A few long dark on
 Body black, a white at striae 10-12. 5-6 feet whitish, the
 feet black.
 May 30 Hd 2. Black, head white and sides of the body
 also center. Red black white 5-6 10-12, white 13-14 and
 Vents large many old dark brown velvety smooth. On
 1 black shining. Hair white long tufts on 5 & 6 feet black
 black, white 4-5, 5 lat, 6-8 shorter than black on 5. Feet
 9-12 old black distinct. Tufts present, others at
 the vent spinose at top scarcely sharp, smooth.
 May 31 Hd 2.6 same as black and white on 11, 12-13
 and white. May 31 (last) Hd 5.6 12 gray black
 pale at ends. 3-4, 5-6, 8-9, 10-12 black, 13-14 white

Gelehrte Instruktion 1829

The mature white oak feeding in patches of oak and
a few more oak or better has been found by
well. very lively & jumping to the ground without the
slender; hd small, rounded black, pale & high defined
bell flat; pale brown ground. Small pale with
brown dots just on corner. Body slightly flattened,
incision distinct. A row of add. 1 sd Graph
brown dots, the latter stronger & more numerous
- line. Dots irregularly shaped, 2 to 3 on 3-4
marked feeding the larvae just 1 cut side
a little later the marking the shaded material 2
a faint red brown line. Tubercles small black,
on the pale marks 1st & 2nd 16, 17 separate.
Scales distinct, not large. End when pale greenish.
Ant pupa 1921 cut 1746

1330

W. J. J. J. J.

Egg by a certain 16943 Jan 23 1901. Spherical rather
 to one about 40 ribbed, swimming toward water.
 Ribs sharp narrow, then space concave with distinct even
 even striae almost on distinct on the ribs being.
 Water yellowish translucent yellow white streak with
 a broad irregular red ring. D.B. height 4.5 mm
 Hatched Jan 28 1st round white 22 roundish hatched, eye black
 red, yellowish black, 12 long d., roundish whitish head
 faint green. Antennae long, round black dotted round.
 1st-16 separate equal to 1st, 1st, antipennae absent. Head
 and legs black. Blackish yellowish lateral. 3rd eye
 2nd pair! 1st 5 rounded blackish. Red brownish, green
 green front, 2nd, oval yf. 1 rather large blackish
 black. Trace of white d. 2 1st line. 1st pair
 7.8 a little shorter, darkish blackish. Yellowish
 2nd July 6 1st 9 mm. dark brown. Body blackish on lobes
 round, sewing blackish. Eyes slightly under 2 1st crest.
 Body dark robust, cylindrical, no enlargements. Down
 gray brown the spicula faintly mottled in golden
 gray brown, the dorsal line. Below dorsal

Therapsy pale, shiny, pinkish. Tubercles pointed, elevated. Blackish, normal in at top of spiracle. Feet, legs thickly covered, blackish. Setae rather long, pale curved. July 9 Hol 1.2. Setae thick, long, pale pointed and erect, shiny retracted. Indist. brown, rounded at line diffuse above, obscure pale. Color fading over time more oblong. Tubercles black. Abdomen colored with diffuse mottles.

July 17 Hdd 1.8 Sarn, gas, obscuring remainder. Small
free round holes, mottled, all solid brown.

Aug 13 1961 cat 19007 Canadina eximia wds

I described road, leading from 4th St. to 2nd St.
N 322 1899

Chamaecrista angustifolia

1031

Leafy larva in terminal leaves. Epilobium? Silver
 Bluffs Col. June 23 1961. With terminal leaves
 which grow upright and each out bud. Grass com-
 mon. Shrub and climbing, upright, skin fine
 granular, but not smooth. Skin pale green, is
 and v. d. line rather narrow. Skin smooth
 greenish, rose shaded all over dorsum. Hd
 small & c. 2 mm, col. large during larva. Seg.
 with a central crease

1032

eggs of Luper 17071 Golden Summit, June 27 1961
 Elliptical, rounded, rounded flattened on 2 sides, the
 flat side strongly & concavely flattened again for
 a small elliptical space in the center. Each means
 plates, evenly rounded, one very slightly the rim
 pointed, no perceptible truncation. Refracted
 much except for the minute white punctures that
 resemble the pores at the V of the obsolete ribs. Surface
 pale yellow, slightly shiny. Lat. loose. $1 \times .7 \times .6$ mm
 Some shaded in pink, some translucent but faded
 to hatch - July 11]

1061 Cont. Pale brown, antenae in an X mark a shade
 darker; mouth & small antennae dark brown, scales
 black. Body flattened, segs. prominent lateral, 2 large
 3 small but still larger, 4 about size of 2, 5 suddenly
 smaller then slightly larger to 8 & small to end, which
 have rather thick and robust. 13 small round 2-3
 d. shape and seg 2 has no distinct plate. Venter like
 dorsal, no feet, flattened leaving the ribs small
 & are slightly humped from the joints. All pale
 honey yellow. Some dark pale setae laterally
 but none on d. or v. aspects. The ends 2-4, 12-13
 somewhat orange tinted.

Ant July 17 1961 Ant no. 17575

1033

Off by 9 Luper 17073 Golden Cole (Cinnabar) June 27 1901
 Elliptical, well and somewhat flattened on 2 sides, on
 one depressed the other rounded, concave but
 rounded truncate. Pits coarse, broad, raised,
 slightly whitish. Color olive green, $7 \times 5 \times 3$ mm.
 Hatched June 30 4th rounded, slightly lobed, oblique
 lines, pale brown, cells black. Body rather short, a
 little flattened 13 segments to angular tubercle.
 Whitish, a very narrow purplish line and a broad
 somewhat diffuse red one. Pits at ends and cross
 striated on dorsal seg. 5-9. Venter brownish
 purplish shaded throughout but the feet pale. Setae
 pale tubercle minute feet normal. (Dead)

1028 A

Luper on white woolly insect on plant Golden Cole
 July 1, 1901. Seems to be same as 1028.
 Vol 1.9 rounded bilobed smooth rather prominent,
 purplish green, a white diffuse streak, green dotted
 up face of each lobe; a brown streak from mouth to
 above ocelli and faint streak in A. Body normal
 moderate seg. somewhat reniform. Venter
 brown green, 3 subconfused narrow bands A white
 fine one on the sides more distinct; stig round
 broad white. Venter with 4 brown lines and a row
 dorsal, somewhat indistinct and subconfused like
 the dorsal ones. Slight brown seg. shades on seg
 under legs. A black dot, spot on 5. Tubercle small
 white with black hair tubercle. The feet have
 shield maculose with body.

1034

larva on mature white oak *Schalia* Col. (Dec 17)
 Hd round bilobed on surface depressed, brown, vertices
 notched a little, a pale dilated stripe ventrally a face
 1 each lobe w. 1.3±. Body cylindrical normal moderate
 lumpy; slightly wrinkled colored between 2 & 3, a low
 sd cone behind it on its side base on 7, a similar one
 on 10 but it more raised at its vertex. Skin irregular
 creased annulate, slightly wrinkled. Illusion white
 green shading brown shaded in a faint dorsal lattice
 darker shaded along the hypotenuse. Antennae 2-3, cream
 brown under lamp in 7 & 10, and fine faint dotted
 in longitudinal line. Tubercles small black spots
 setae obscure. No tails, unicolorous. Central segs
 twice as long as broad, imperfect short with thick bases
 (Dec 17)

Probably *Metanema excelsa* Walk | February
 had this commonly on oak in May, and 11 May.

1035

larva of *Crocota* 17076 Golden Col, Fort Hill, June 27 1901
 Rather low, rounded, considered the face flat and
 slightly rimmed, shiny pale yellow. Pub. numerous
 linear irregular hexagonal but narrow, faint 5-6
 found small pink. Hatched July 1st and raised on water
 pale luteous shiny, head shiny, shiny shaded on vertex, eye
 black. Body normal. Antennae pale luteous, vent 1 round
 ovary. Hair dark long, especially long from 5-6 & 12.
 Ants 1 compound in dorsal line into a single pentagonal
 shield 5-11, ten separate elongate shields 12
 single barbed; 1 single hair, produced forward, dorsal,
 III-V single normal (1 alone) On June 27, II & III
 separate, II 1st, 10 large, 1 moderate, no 1st antennae.
 Ants 13 uniserial dorsal. Hair II-III black, rest white. Spinulae
 shield not hatched, divided notched behind. Red color-
 less. Very long and slender sp. the ant. curved.
 July 24 Hd dark, bilobed shiny. Body greenish green
 good transparent shiny. Ants 13 uniserial with numerous stiff
 hair. 1 moderate, hairless. Hair dark, obscure.
 July 24 Hd 1.4 (old second time) bilobed antennifer. Head
 Body brown, not dark, rather small, light color
 with III very small, a straight but orange d. line
 white black, hair black & pale 5-V, rather thick
 sparse, large first. Ants 13 uniserial, none, 1 small
 it almost the size large. All have black hair at
 anterior, white on at base, but more black &
 spinning July 29 white notes.

Ant Aug 8 1901 cat no 17974-5
C. aurantiana Th

126
 last, but not exceeding edge of body. Abt. similar to 1st, 15th
 largest. Color small, retracted. 2nd & 3rd not
 visible. The feet almost rudimentary. No marks.
 no visible setae. *Leucophaea albula* (Cresson)

1036

Leaf miner in cottonwood, various leaved willows, etc.
 Morrison, Col., June 28, 1921 (by Cresson) On
 black blotch mine (see description previous) sent to back
 all white, flattened, cylindrical, feet normal, 5-6 smaller
 like - white. A large black mine under upper ep.
 but larvae (just entering) very 2 down, making a
 large deep blotch through. Small in each end, feet
 side by side, was contained. 1st foot, rounded, a hard
 drop & narrow & black above; whitish, 2 black, pale
 middle & upper about 3 or 4 down; mouth small, pointed
 brown, mandible small, normal. Body slender, flattened
 laterally, moniliform, 283 larger than 1st, 5-10 again
 a little larger, subequal, 11-12, 13 tapering, smaller &
 smaller, 13 divided but the segments of equal width.
 1st segment as a slightly rounded, 2nd dark, perfect, conical
 whitish. 3rd segment large filling whole segment of 9-10, yellowish
 faint, segmented. This part very dark, 4th segment, 5th segment

1037

Eggs of minute 17121 Morrison Col. June 29, 1921.
 Spherical, ends rounded, the anterior end a little to
 more oblongly, reticulate diameter considerably exceeding
 the lateral, somewhat round, black like a lens.
 1st not flattened; last 1000. Body distinct, rounded,
 rounded rectangular, 1000. The middle 2000 as
 little more prominent, projecting into through not
 strongly developed, a little black, with numerous
 very pale yellow, shining, shiny, bright 9, 10, 7, 1000.
 1st dark, 2nd 1st black, quite black, with black.
 feet, erect. Body normal, 12 cannot escape, whitish
 the first faint brown; black, small, rounded black.
 1st small, 1st, small, black; and 1st, small, 2nd &
 28 smaller than 9-10. (Seems to like had deep eye stuff)
 sent, failed to eat)

Chloroclelea dilata Hylodora

July 4 1918, *Amelia unicolor*? Platte Canyon 9-53, 1901
 Elliptical, evenly rounded on dorsum, less than the
 other but not flattening or truncation; ventral end
 perceptibly depressed. Pale ochraceous, the surface
 finely reticulate in sculpture, the line broad, rounded,
 rather regular, a color and any perceptible structure,
 surface very fine, irregular granular shagreened. The
 very distinct dent in when treated in and flat
 not again. Size .8 x .7 x .6 mm. Said adherent in these
 two range. Very large some being 1/2 the bulk of other 12.
 Hatched July 8 1st round, lighted feet before, center
 thin, erect, black. Red slender, greatly elongated, legs
 slightly swollen 2-4. The feet distinct, approximate and
 small normal in 10-13. All pale yellowish the legs feet
 very distinct; faint 5-8 brown seg. Spots - Tubercles minor
 faint, pale, small, dark, slightly enlarged at tip. Small feet
 with red blackish streaks and a pair of spiracles in
 region of shaded in oval leaf. A faint subquadrate
 tubercles about 1st on 2. Setae oblique black 6-13, found 2-5.
 (and anything in Platte Canyon in good. also noted from below July 12)
 Shed July 8 1st 5 rounded lobed dark free, dark brown
 marked with darker in anterior and sides, lobes.
 Red slender elongate 900 normal, approximate at its
 extremities pale brownish, granular from food a broad
 blotchy, faint, faint red brown line a broad dark brown
 blotch in 1st 5-9 and faint on 10. Headed line whitish.
 Setae faint obscure, annulate. Setae short stiff black. No shield
 (Dead July 25)

1043

Intensified in wild cherry (olden) col. (H. 1901). July 6 1901. Solitary, webbing bipeds a leaf as it is about along the midrib in halves looking most opened, as with stroma. Punct the inside till all brown, yet a large larva. And pupates apparently. Hd broad, bilobed, shiny luteous. D & venter, reddish large black. Body rather flattened, tapering slightly at the ends, wiggly shaped legs not strongly annulate. Shiny translucent pale green. Cdh large, pale luteous and contrasted. Tubercles a little elevated col. also, con. column, inset, ilacit, ilacit, ilacit. Setae involut pale. No marks. Tracheal lines brown white. (all dead Apr 29 1902)

1044

Intensified egg laid on top of a woodland leaf Platanus communis. A flat mass overlapping like a leaf. Elliptical shiny translucent yellowish with scale-like mass 9.5 x 4.5 mm, egg 7 x 5 mm. Pts linear irregular elongate brownish as in crows. Attached to the leaf during black insect pale, bilobed stigma. Body slender cylindrical all pale yellow without shields or plates. Tubercles obsolete, setae obscure. Body somewhat and spread. Feet normal, pale, short. Cdh sparsely annulate & with hairs.

Head pale luteous black, greenish brownish no marks. Eyes large, cth black.

Light Hd black as pencil. Brown eye starting shield. Diluted green in front, brown ventrally. Mark a thin line of black along the side of the head. No dorsal ridge. Pupating now. Epistoma & mass of warts. White.

Can. Aug 9. Cat 17976

Copy for Series XXXVI

Sagronilla subobovata Lat.

1045

Eggs of Latr. 17264 July 7 1901. Eggs and nothing elliptical. Side rounded, flattened, transverse rounded, a little oblique, outline is general a little irregular, no end depression. Pts circular-hexagonal, rounded, varied thin cell areas forming round spots like a thin white plate all over. Pale yellowish patch turning darker. 6 x 5 x 4 mm. Roll easily.

Hatched July 12. Head small, slightly bilobed, pale, dark dots brown. Body moderate normal, translucent whitish, marked with solid brown brown & greenish & line dotted in the back numerous obscure whitish, greenish in tone diffuse antennae, 5 mm brown seg. antennae. Mouth a long with teeth of a small size. Setae long. Anal feet spreading, all seg. feet pale. The dorsal bristles. Tubercles, setae minute inconspicuous, short, capitate. Thorax d. slightly shaded in brown.

Head July 19. Hd + mouth luteous darker except in the brown from 5 to each side. Body normal, rounded, solid luteous with 5 broad brown lines. Seg. brown as before marked by numerous fine brown spaces. Setae long, brown color, obscure at ends. Cdh d. sd. lat. Tubercles obsolete with dark capitate setae also whitish the enlarged dark looking later. Segs faintly annulate (line seems to be at sd. lat. not brown, other w. v.)

Head July 25. Hd. 6 rounded bilobed, brown pale marked, a pale curved line on each side. Dotted & white capitate setae. Body, obsolete with fine red-brown line, slightly curved, arms on each side as space. Stigma of the dorsal thorax (head) 5-9. Dorsal d. white capitate setae. Fine annulate bands in female ventrally.

Head Aug 3. Hd. 8 rounded head, rather strongly bilobed. Head in face pale, dark marked in sides and center. Setae pale, short, capitate. Body, somewhat enlarged, much reticulated, normal seg. with annulate markings esp. at ends. 5th seg. ridged, prominent on both edges of seg. ian. well appressed. It is a slightly prominent annulate. Round midventral dorsal brown. Segs a little lighter yellowish & with lines & pale brownish. On each side which are with ridges, prominent brown. Markings markings, lateral, forming a line central & lat. Feet short dark setae with pale capitate tip. Head. 5th ridge marked and stretched in pale. Aug 11. Larva

Track and colts taken from 4 to the Grand Canyon.
Doubtless, somewhat faint, observed in spot on road
S. of Fort Hale and probably found it for a
week or so. Mounds are absent.

Plant Desmodium 1010 Desmodium 1010, erect w. often ad-
scandent, 3-4 dm. tall, base, apex of leaves bipinnate
brown mottled, apex brown white capitate. Bark
black, attenuated somewhat before, fine, smooth
dark brown-black variegated with black tessellate
markings on leaflets brown in d. thin, smooth
flat, terminal in stem black & granular
cylindrical & black set long, all clustered & joint.
S. & p. from joint 1/2 in. diam. 1/2 in. capitate. D.
tessellate joint w. s. s. s. somewhat very elongated with
(Seed Oct 17)

Eumera futuraria Gu. Syn. Ent. hem. II 63
Eumera 135

$$1046 = 266$$

Eggs by 9 hoppers 17252, 17253 and 17255 ten laid a day later
 (17254) 6 eggs loose and rolling. Elliptical one dominant and
 less than the others but not sharply flattened, not dis-
 tinct at either end. Microspores end roundedly con-
 cave the other strongly rounded. Both about alike in
 differentiation by the subterminal transverse slightly
 oblique. The two ridges are most symmetrical, the egg
 as rolled stopping with the same side up. This has
 a single median impression from the lower side
 two such grooves. 12 longitudinal broad raised ridges
 giving a similar ridge about half of transverse,
 broad round, rounded, beaded with a double row
 of minute pores, joined by diagonal transverse ridges
 to form squares and also by submedian fine obscure
 transverse line about 1/2 the square. Begging one
 square from each end the 2 central ridges are of-
 fset proximated the space between depressed as a deep
 smooth groove. On the other side the two rounded
 borders are depressed, their bounding ridges less sharp
 approximate the grooves crossed by struts. In one
 egg the double grooves begin one 1/3 from the other 2 squares
 from dominant, but both ended sharply & crossed 1/2
 from the other end. In another egg they were reversed.
 In still another there was but a single groove but it was
 not central and, less deeply marked than the dorsal
 median one. Microspores end convex, reticulate, the
 other end convex from the confluent ridges. Green
 turning later pink with ridge pale. $4 \times 7 \times 5$ mm
 (17253) 1 egg, the same, microspore transverse centrally elevated
 (17255) 10 eggs. The same. The ridges overlaid the dorsal
 groove, projecting as white rim serrate by the pro-
 jected pores which appear as light brown teeth.
 Ventral groove variable, not widening by the ridges.
 Hatched the 27 (pale) hatched from a light egg

1047

Egg by 4. Loph. 17259 July 7 1901 elliptical, one end strongly depressed, wedge shaped, the side narrow but not flattened; conical, end somewhat truncate. About 18 longitudinal lines stopping sharply at edge of truncation a little compressed at other end. Surface smooth, narrow, raised joined by great cross lines, similar, forming narrow elongate parallelograms. Alternated in successive rows. Six pores at junction of ribs. Size, turning corded crimson 8 x .6 x .4 mm.

(Hutchinson) July 13 1st larva, not hatched, somewhat pointed; dark brown not shiny, surface of moderate to coarse denticles, - pale spots covering denticles. Body moderate, normal, cylindrical, smooth. Endites whitish, getting paler from front to back. Broad brown stripe, moderately dark red a dark brown connected by blotches forming lines on 2-4 and 10-15. Grooves, 2d & 3d pale line and faint pale streaking on 1st & 2d. Tubercles moderate black, rather small, very black, not distinctly capitate. All feet reddish shaded. (cf. caenostoma)

2nd July 14 1st 5 rounded bilobed, flattened before, spotted thick with white on face but all appearing and sides & back dark brown. Body cylindrical, rather short. Dark, smooth normal. Tubercles moderate but rather small black distinct. Dorsum dark brown and by denticles on 2 & 4 sides. Side whitish with 1 band, dipping a little. Noth dark brown back, wide than the white space. Venter broad dark, with narrow 5th and rounded & white line the latter by maculate in dark brown feet pale lined. Tubercles brown small.

(Dead July 22) *Deilimia caliginaria* (Hutchinson) (cf. caenostoma var. 1047)

(Hutchinson 1047?)

before;

♀ not like Hutch. type, ground color rather than brown, deeper, no strong dorsal dot widening; terminal gray spots more irregular front and edge with denticles and carmineous markings. Exact match to 1047? or caenostoma Kochels. Others: 10. not too white, some almost totally different but a ♀ coming very close to Hutch. type. Last but not least from shade & denticles.

Tubercles black & parallelogramic spots small to very small but I have seen no type.

1048

Yorpe in Ceanothus, Golden, Cal. Aug 6 1901.
 Hd. 8 rounded lobes, flattened before each. White head
 marked a brown. Black forming large irregular pattern
 at vertex and sides leaving face pale with only a few
 dark marks. Body almost exactly as in 1006 I as the
 it was labeled this at first.

That pupa Hd. 1.3 as before somewhat black. White like
 bluish white, face spotted in brown green, vertex
 & sides with brown transverse stripes molting
 forming a band about face. Body white rounded.
 smooth. Abdomen green, 1st & 2nd line white, darker
 edges, joined by whitish white blotches on 5-6 to 7-8
 1st line white, outlined blotched to dusky yellow
 stig. Venter similar white kind a row of large
 yellow brown seg. 5-8 blotches. Feet purplish shaded
 on shields. Tubercles. Setae small black microscopic
 another (collected) Hd 2.1 in same but the stripes
 brown marks on face Body same all white shaded
 the stig line connection with the vertex and all
 has a little white than body. Seg. 5-8 blotch 2-9
 purplish brown, purplish dark. Feet brown shaded.
 Spiracles brown. Tubercles & setae as before

-10473

1049 (see 1045)

Egg by 2 larvae 17304 Pine Grove, Cal. July 9, 1901.

Found on glass but only 1/2 hatched. Elliptical the sides
greatly roundedly flattened, one end obliquely rounded
towards the other rounded, not depressed. Rets
rounded, hexagonal raised but rounded, con-
caveous. Ten spines at 5 rounded, embedded as with
low white cones distinct except on the sides which
from the base of attachment when they are absent.
Through the rets are four narrow green shining, white
lined by the four cones. 8 x 6 x 5 mm
In time dull deep white. Polygonum

Hatched July 10. 1 rounded oblique, dull orange ochraceous.
Body roundedly slender, up a little bulging centrally
concealed elongate, normal. Very white, greenish
tinged, a broad straight dark brown sd band a little
diffuse, indistinct at the base, convergent to a single
point at 13-15. A broad rounded ventral band,
very slightly widened ap. coloring and feet. This is
pale, tubercles a rather small densely brown.

July 11. Hatched. 1 rounded, apical, white, white
a rounded to subtriangular brown with rings of brown dots
and along green to the lobes. Body, which rounded
as before the sd bands from behind narrow in 13 diff-
erent the ventral band supplemented by a row of
10 brown tubercles and a row. Tubercles from cells but
July 12. Hatched. 1 rounded, slightly bilobed, dark
gray and a small green each with light gray
frontal, obscurely dotted streaked. Body somewhat
broadly flattened, the sd oblique dark gray, oblique rather
broadly blotched in white. Feet brown white
brown narrow longitudinal lines. Dorsal faint,
low, broad, the sd region faintly blotched in dark.
Venter with obsolete pale line (Resembles 1039)

July 14. Hatched 1.6 rounded, slightly bilobed, oblique pale gray
thickly mottled in black on the center of the lobes leaving a
gray dorsal mark above and a white and black 10
The mottling from 3 ventral bands of which the lower one is
faint. Body a little flat, sd lines dotted normal, head

stiff. Tubercles a little enlarged, up 11 of 8 and 12
which are rather prominent. Gray with 12 defined
whitish longitudinal streaks, oblique sd black streak on
5 hairy & covering dorsum, or fold blotches & light
and with a dark hairy border both back & venter
oblique tubercles, tubercles black feet concealed
July 15. Hatched 2.2 rounded, slightly bilobed, lobes 12-20
higher wide than 2 but head obliquely flat, fine
darker markings reaching venter. Head black dotted
mottled on a light gray ground, the 12, 13, 14 and 15
space each side of a line with the light color
predominating. Yellow and long curved antennae
dark. Body cylindrical, elongate black like 11-12
oblique knotted. A low elevation from 11 to 15, 11 to 11
is circular produced and the 12 venter of 12 are slightly
elevated. Dark gray blackish streaked in all de-
fined markings like back. Dorsally and venter of
eye are plain, front black stripe on a pale gray
ground, feet black annulate, venter & dorsal d.
a single sd black irregular white line. 11 to 15
annulate of white, other tubercles black. 2 and 13
smaller pale gray. Sides venter scribbled oblique
a pale ground, faintly longitudinal line and
a little reddish shading in venter ventral
the feet pale black dotted, 2-3 head apparent, 4 and
at 10-15 with body like a head on tube. Feet of 10
small white annulate, and feet extend to and feet
to 11 length in bottom of feet extend slightly.

Exochus
Exochus
Exochus

1050 *Exochus*

Egg of *Exochus* 1798. Apparent but much off. Elliptical narrow in one diameter as usual, one side a little straighter than the other giving a suggestion of reniform shape. Periocha and rounded hatched the other not depressed. Ret. rounded, elevated but with sharply angular crests, regularly hexagonal ret. above perfect hexagons the cell areas shallow pits. Ret. large, uniform all over, pores at angles in round whitish cones but not distinct nor indicated. Egg uniform green, cover absent on under side. 1 x 6 x 5.5. Late time so small heavily pink. It is mid during hatched just hatched and round oblique, fine dull grayish. Later a faint dusky band on the side. Body moderate, rounded, rather slender, smooth, green white a broad slight even purple brown belt and a little deepened spreading on 2, the joint conjoined with a single d. 10-13. A similar colored band (ret. band, dorsomedial) with on the gaps. coloring feet of 2 and 13 to 5 line. The feet pale. Tubercles on feet small, dark, obscure. Head large, scarier each other (the mid chern).

Head 18 feet. 5 rounded lobes and whitish mottled with brown on the lobes. Body grayish, white the broad dark brown and bands joining behind on top; ventral and supplementary by 5 or 6. Venter deepening forming a line and pale ventrally. 5d feet divergent, the lobes are 2 tubercles & setae minute.

July 21st, 8. Head small gray, striated with dark dots up on line on each lobe. Body moderate, gray, blotched with ligula 5-6 suggesting diamond shaped wings, and ligula along 5d fold. No distinct marks on base of pale line, rather numerous fine, a few small d. prominent long curved, whitish, setae minute.

Head July 24. 18. 1.3. Head, small, lobes, broad, gray brown 3500 and a d. spot each side whitish, forming a line near 13 line, black edge & transverse of black dorsal surface. 10-11 but mottled in dark esp on 3 line 11 ventral bands obscuring greenish. Body moderate rounded, the 10 line oblique & elevated, a cap. setae minute, joint. Head gray, faint longitudinal line on face.

a very faint darker 5d line and blackish dashes and on seg above pale 5-6 fold. 10-13 more heavily black shaded. No well defined marks. Tubercles blackish, setae short. Feet dimorphic. Anal plate large. A pair of short anal spines. A distinct short d. collar elevation on 5. Head July 27. 18. 2.0. Head, slightly bilobed, long, joint oblique. White, all the body covered with pale green mottled. Venter gray & light white esp on the side. A broad band white space, edged with black above, bordered by 5 d. nature; epistoma gray, antennae moderate, incurved. Body moderate, central seg. not quite twice as long as wide. A d. cord elevation on 5. Oblique of 2 cuticular ridges bearing 11 of each side; 11 of 11 in a bundle & change for circular elevation. Anal plate with large rounded d.; a pair of ventral spines. Use smooth tubercles scarcely elevated black. Body gray, mottled in the defined bands of cinnamon, reddish. Reddish d. with black & whitish spots, lat line, the joint part of seg. annulate and gray; 5d fold pale with black marks above and a seg; venter with several single or geminate minute black hairs, subventral. Hatched joint on seg. whitish orange shading at spiracles esp on 5 & 6. Feet gray. Spiracles black rounded, setae minute, short. 12-11 d. separate. 10. 11 joint; 11 in 5 5-6 not much scattered. Segs seg 9 a faint close cover of brown cells. Head Aug 20. Oct. Aug. 1881.

1050

Eggs by ♀ lotifer 17299 Pine Grove, Cal., July 9/1961 Adherent,
nucly stick under the label. Elliptical moderately but
unevenly flattened one end narrower and slightly
depressed, the other more obtuse rounded but not
truncate. Rets coarse sharp, elevated, rather broad
arranged in quadrangle cells centrally but curved
into an irregular net work at both ends, none so
at the smaller end. Centrally on the flat sides the
cells are quadrangle & somewhat elongated, edges a
little curved. Single pores whitish, obscure. Cell area
moderate pits flat. Individual olive olivaceous, whitish
dorsal. $1 \times .6 \times .5$ mm at thicker end.

Hatched pupa 1st moulting shed free, slight blotch, pale
brassy yellow body, short, rather thick legs not elongate
conspicuous yellow, 5th ridge prominent. Grounds and small
sclerites (a dark streak from ant. canal). Tubercles
small, dark, on broad whitish ridge, rather short/pale.
Ant. normal. Unmoulting. (Failed to cut)

Diasticta biactata Voth

1084 cont the d. leaves on 2-4, dark in a with leaflets from center, broad leaves on 3-4 have dotted; rounded and confused with dot on 10-12, 13 white dotted leaflets on 2-13, the first 10-12 cream-colored which found underneath, silicles dark. Spines green, faintly lined. Ground orange. Spines behind spiracles. There are kind. The other side of 1-4 on leaf 11) the leaf 29 had 17 spines and a small rounded white leaflets. The water sign is visible. Spines green, white dotted a small, irregularly shaped in water, cool, later white contains 2 black dots, spiracles white, 1st small growth irregular, a little orange, irregular cup on 2. Not rounded, rather small black black, a broad dent. Though edged d. 1-2 white, back of the maximum on 1-2 measures, the 1st found very, 1st the 1st, 1st spiracles. 1st of white, broad white dotted the base, rather green found in white, spiracles, median & broad rather and clearly imbricate. In this I find replaces 1-2 spines & 1st black, creamy green, faintly irregular, imbricate. On 10-15 I found under

white dotted

more irregular, containing white dots. d. 12 only
shaded; feet black-brown, a white line on
leg, line on upper half of foot. 12 & 13. Head & feet
black. Natural ground, often from black dark.
Eggs rather numerous, minute, fine as on foot. post.
Died in Dec or Jan: head 9 mm. 15 (1902)

1067 (cont). The feet short pointed. Procoxae lat and
 all one seventh 7-10, 13, coxae in a complete ellipse
 thick in front half. Spine in ant half 7-10, or 13
 above but absent in front of front half. 1st coxa
 flat, 2 & 3, Δ rounded Δ touching vertical triangle.
 Pale green, mouth closed, rounded from sides but
 2 long setae from center of lobe. Body slender, slightly
 flattened, segs subequal but tapering post. The
 end seg. somewhat shortened, 13 divided, the lobes
 short and small. No Smith. 2 concolorous ab-
 gents. All pale greenish white, rather opaque.
 Tubercles obsolete but several setae rather distinct.
 ii and iii esp. on 12-13. Setae fine rather long diverging.
 Spine not springy except 2 & 3 pair of ad. seg spots.
 Incision well marked but scarcely annular form.

1052

Blotch mine white on back & yellow leaves, fus-
 quered out a hole or slit. Pine Grove Col. July 9, 1901
 Larva tapered, all white during summer. Feet
 small, a pair of hairs from each joint. Three
 enlarged, 5 small. 1st dark brown, hatched at winter.
 Larva shape 15 to 20, 1st dark, 2nd pale, 3rd small &
 dark brown. The feet short, pigmented lat. (T. H. H. H.)

1053

Acronycta a yellow Pine Grove Col. July 9, 1901. 1st. Very
 black. Head & ant. & epistoma pale. Body black, cream
 colored, dusky. Markings small but distinct white, 1st
 white leaving head & 1st joint. 2nd white. 3rd white (1st & 2nd) in
 5-3 and 12. 4th and 12 pale yellow, over short and
 not abundant, a few large hairs at the end. Spine
 short. Tubercles from black, above, 2-12 and below, pale
 orange yellow 2-12 and. Not black.
 Spine 2-12 leaves July 12

1054

Webbing young leaf of aspen cottonwood Pine Grove Col
 July 7, 1901. Foliole thin, young leaf with web which
 reaches down to petiole and stem, broad band-like
 and extremely, from a tube within the leaf.
 1st pale, hatched over winter, 2nd with reddish
 small black. 3rd & 4th pale, translucent
 hatched. Body of young white, 5th lat.
 1st pale, 2nd black, irregular edged dull purple
 and leaving the small black tubercles in
 the pale part. 1st white, 2nd white, 3rd approx. 14-16,
 very small. Head of 1st pale, shading
 setae moderate pale feet normal, short, green.
 Spine 1st & 2nd July 12 cut 17762

Salixia praeinornata Chant.

1055

Twined on *Ceanothus* Golden Col. (Summit) July 9, 1901
 Spine a delicate web over feeding leaf. Side in a
 sulcus tubercles leaf or between leaves. 1st round
 apex is a, shiny black. Tubercles & epistoma pale.
 Both thick and flat. 1st large, black, all of 2 black
 and 3 minor black. 3 in front & 4 in front narrow
 1st narrow, 2nd black in bright white. 3rd pale
 black. 1st white separate, 1st & 2nd, 1st & 2nd. Body
 green, faint tubercles shaded in yellow, then clear
 green, a faint broad whitish set line along 1st & 2nd.
 Tubercles small black, often black moderate. A
 faint whitish d. line. Head pale whitish, 1st pale
 late before set normal green. Tubercles white, 1st
 Ant July 20, 1901 cut 17576 *Salixia americana* Chant.

1056

2 eggs by 2 Deltoid 17513 Pine Grove Col., July 9, 1901. 3rd
 physical, 1st flat, smooth shiny green, translucent
 1st. very fine linear irregular, irregular, even, round
 1st white. 2nd 6 mm (infertile).

Shed July 23, 1901. Head 1.2 rounded, slightly bilobed, 2 long, head oblique front, antennae large projecting, whitish on the vertex about middle brown & a narrow black mottled stripe on center of lobes, space between yellowish white, side white space brown mottled. Ant. black ringed body slender, round, head straight, first annulate, yellowish white, a broad depressed, widest on segs, narrow lat. narrow str. & narrow sd from black later, a broad seg widest ventral band, sometimes pale or dilated medially. Terga pubescent, most very definitely edged, some or less confluent. S-V fold thin distinct pale yellow. In some light brown, other very black ventral other faint red-brown faint black, tubercles & setae small, dense, sparse black. The feet pale solid, appressed, abd. appressed whitish ventral, dark brown within. Some abd 1.4 like shedding after the last July 23rd late one black and longer than 1.2 mm coloration same.)

Collecting Aug 8 on flycatcher near at ground. Hd 1.3

July 23, 1901 Cat. 19033 *Synaldis emunctata* Gn

July 23, 1901

Found only stages, feet thin 1.1 and 1.6 mm (small wings)

1060

Long antennae on upper side of Hill Creek, Platte Canon July 10, 1901 (all gn) Larva near fountain near field with black grass. Indenting to a broad rounded end, the last segment a white. Stems at margin on a stem. Emerges & a slender stem at end 1 mm (T. B. Smith) 1 plant = *Cercocarpus parryi* (Wats.) Engelm. Got a lot of live ones Salida col. July 25. Probably = Cat. nos. 17903-4

1061 out pt

Case cutter on Hill Creek with 1060. Larva on upper side stems from lower of leaf in petiole widening from base the elliptical case cut out of the stem. Larva small part of larva. (To B. Smith) 1st small flat, flattened 22 partly extended, under side bilobed the small 2 upon trailing the wide ventral 2 (after 1060)

1062

Populoid on T. B. Smith on 126 plant Platte Canon July 10. Webbing among the prickly leaves, from caterpillar web in form of loose white tube. 1st stage, round apex 2, brown, black shaded over lobes cut by thin whitish line on each lobe, mottled, cutting the body down. Body unguis shaped, nearly cylindrical tapering a little at each end, narrow behind. Feet normal short, thin, no black, brown shining seg. *Synaldis emunctata* the 1st segs distinct a straight, sharp edged white sd band below i-ii. cutting the large blackish tubercles (first 10-12) cut. and reaching end of anal feet. Tubercles with long short concolorous, green 1st, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100. Tubercles thin brown whitish the skin nearly transparent, setae rather long, pale, all dead

1063

Popillia leucura larvae on wild cherry (Platanus)
Col. July 10 1901. Larva was all shiny brown
with a white saddle.

Hd 2.0 Saddle, S-V region narrowly cut out of 13
white. Sd hump pointed on 2-4 and 12-13.

Small blue speckles sd, lat in brown patch.

Hd 3.3 shiny stone brown, erect blunt, widening
to 2. Body beneath up to 2d joint & 2 each
side of 12. Even a black band at

incision 4-5 dusky edged yellow before. Abdomen
yellow spots & 2 black rings the larva (? 10)
Just beyond blue proplectid, black ring around
joint & white saddle black - 9d, joints
black blue dots small black rings. SV
and feet whitish.

Head Eds (1/2) III 2 and all of 1st
character noted

1064 *Popillia* 1064? in leaf, (dead, all joint spots)1064 *Popillia* *Popillia*

Just opening Tattler? on green pear flower plant
Golden (cumin?) Col. July 11, 1901. Spin a delicate
silk tube about the whorled base of the leaves and
in a leaf, feeding on its edge & working. At
rest on the ground. Larva tilted apex in 2, oblique
pale green, opening marked in center, proplectid
outermost dull brown. Body green, 3-annularly
imperfect annular brownish brownish brown.
Striped in proplectid d. sd, 2 lat & slightly all along
of each and about as wide as space. Bents slightly
the whitish, narrowest. Sheld green, dotted in
match the larva. Spinous dark. Tubercles small
black, 10-11, 12-13, 14-15 with narrow, a odd
16-17, superposed upper dorsal. Spin spotted &
irregular edged. Seta brownish rather long.
A(-A?) in same plant from Col. 1st pale brown
oculi & mouth black, body green, wiggly shape, no marks.

1065

Larva on 1064 plant, Golden Col. July 11 1901

Hd 1.7 S-shaped, tilted, flattened before, oblique, green.
pale straw yellow from proplectid joint in side & round
darker band of mottling beginning above the brown anterior
and the pair joining at center - half cylindrical, rounded the
central rays, moderately elongated. Feet distinct
concolorous. Behind straw yellow narrow marked
in brownish & green, slightly brown spots found by
preparing a column of a 'subdorsal' greenish d. lat.
A moderate distinct straight pale sd. Larva.
Traces of a subdorsal line, the lat. space a higher
dorsal, tilted. Seta brownish tubercles in
conspicuous convolution, setae dark, moderate long
dent

1066

noted in 1064 plant, perhaps *acacia* but seen
rather brightly colored. Golden col. July 10, 1901.
Hd small black. Body rather light yellow-green
with black. A black irregular spot behind 1;
a nearly continuous band 8d (below 11); bases of
lat and 2-8 black line. Cgk + anal fl black.
Wt small. Hair short, black + white mixed.
Cgk 2-3 run more blackish in at space.

July 10, 1901. Downy black in white yellow broken line
side marked black + yellow mixed yellow white.
Hair then some long white, base from 5-V.

Next July 20 into a tree very dark *acacia*
like form. Another Salda (Mrs Candell)

Conocarpus angustifolius Burck says 1067-1068 (!)
(Sollard) 1067 *Cercocarpus parvifolius*
plant 1060 a 1061
seen on wolly bark smooth leaf bush
with. Will look but not look over the the number
bush with wolly bark. Golden col. July 11, 1901

Seen at first very dense brown, reddish
wolly surface. Then wolly at edge
leaf irregular rounded even a line
by wolly pale brown, green above
central vein $\frac{1}{2}$ or more about
edge of leaf. Same shape and
shape + form as wolly leaf
of a few strands. In the the yellow
a strong visible light green, large and rounded
bunches. Wolly, tapering behind the long black
log cases protruding far behind.

Obs July 11/1901 Col 17522. Not too much feeding
at Pine Grove Col., July 19 1901 (see after 1051)

1068

Found in *Heliconia* Rife, Col., July 11 1901 (D. H. Candell)
Hd green, black dotted. Body blue green d. white lat
and broad sky band of orange yellow. Several long
low-convex black tubercles. Small one on
many hair with not perceptible tubercles. Hair
short, black, con. strands.

1069

Pluvius on reddish Rife, Col. July 11 1901 (D. H. Candell)
See Pluvius probably *hassianus* (see above)

1070

Conocarpus angustifolius

Noted in wolly bark *Heliconia* Col. July 11 1901
(D. H. Candell) Hd round, yellow apex 2, rounded
intern with a few white flecks on surface of lobes
w 2 \pm Body cylindrical equal, normal, 12 segments
enlarged. Shaded orange + green cut by 3 reddish
white lines. Body green or olivaceous in darker line
a straight sd line a shade paler than ground
and a straight brown midline one of brown color but
broadly green filled or as to appear cut in edges
a blue (dark pur) blotch in anal and central + seg
Below these the lat. space is gray to black
dorsally dotted in whitish. Dorsal all dotted
lined wavyly in green or blackish, brownish
central defining a narrow obscure pale d. line
a bright white spot in 14 which is at apex of a
subventral pale dotted marked in whitish
Feet brownish green, the brown shaded. Hair fine
pale to dark changing in appearance a good deal
but not the pattern of markings.
Obs July 12/1901 Col 17527

For Chittenden
Jan 4, 1902

1071

In fleshy, leaved leaves found with them like little
 insects. Salada Col. June 12 1901 (A. W. Caudell)
 One feeding. 1st rounded, slightly lobed, many small
 holes, as if a whole lot of them. Spot a very
 little, small black & a close group. Body inflated, 3-
 annulate, feet normal. 1st annulate, 2nd
 11+12, 14+15 in thorax; 16+17 in abdomen, 18 larger.
 Vites and vi with a whole group of hairs. 14+15 very and (in
 1st annulate) even cephalated of vii, well united, on small;
 vi with about 5 hairs from approx. into tubercles; vii
 normal. Pale green, each seg 5-13 in ant. half of iii
 rounded with purple brown a little dotted by green
 color; on post half lat. distinct band 2+13. Ten black
 joining to a lat line. S-V not colored. 7th feet
 black ringed, all on pale, normal. Tubercles black
 Setae rather short, pale. Shield concentric, con-
 siderable, white before greenish spotted front.
 Setae very densely lined in thorax, a
 small chalcid-like hair. Middle body (Dors)
 more solid, jagged. * See 1100.

1072

Ribes cereum
 In fleshy, leaved leaves found with them like little
 insects. Salada Col. July 12 1901
 One of the leaves a little, palpable in a webbed
 of leaf. 4th rounded, many large propagating, large
 holes, small, small, small, small, small, small
 in an aggregated patch. Body inflated, normal.
 3 annulate, green, a red very light white ad
 line. Shield long, faintly, lat. Tubercles
 small, without plates. Head is as if separate
 11+12, 14+15. On abd 14+15 but not in a com-
 shield. 1-11 are white showing as black dot the
 not smaller Setae moderate, small. Feet all
 pale.

Out July 1901 Cat 17821 Selection, tub. cells, chalcid

1073

Squaridac webbing legs & leaves of aspen cotton
 wood, Bailey's Col. July 13 1901. Body brown, 1st
 elongate rounded, apex 2, shiny brown, a little narrow
 dark brown, blackish shaded on sides. Col. large
 woody black on edges, common with very small
 1st feet black. Body flattened, 3 annulate, 1st
 shaped, subopaque white, unmarked, 7 feet
 long, same tub. cells. Tubercles large, con-
 column and a little shiny, 1st 11, 12+13
 14+15, normal. Feet pale, normal. Setae moderate

(Trib. ad)

1074

Sarcophaga thermopila
 Leaf miners in the yellow flowered Hawthorn
 July 13 1901 under upper surface but from just
 out below yellow canopy and under side
 over led by slit on under side.
 Creation near a large lobed hole
 below upper epidermis. The yellow
 mine are long, tortuous, serpentine
 on under side, not arched.
 1st flat rounded, broad lobed, abraded
 50, large, reaching the extreme angle,
 oval, later, transverse, well black,
 smooth brown, 1st retracted in 2. 2 flattened
 broadly propagating at the sides, without
 distinct shield. Seg. many equal, 4 and
 5 a little smaller, upper a little behind
 13 rounded smaller, slender, divided
 half after a small apical, subnormal
 seg. dented, subnormal. Shiny pale greenish
 yellow without marks. Setae many, slender
 a few pale ones on the side. Feet 7-9 & 13 with
 bristles, looks distinct backward not in a
 definite ellipse. The feet moderate, distinct, dorsal
 Cat July 25 1901 Cat 17892

1075

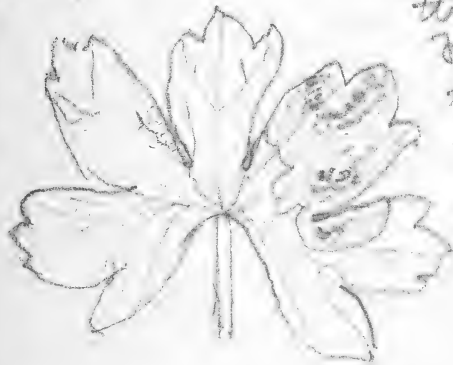
Noted on wild rose, (penetration stage shown) when young green. Collected by Van Candel at Golden. Mature at Pine Grove, Col. Hd 3.6. Larva whitish, thickly mottled reticulate with pale brown all over except a which is sharply pale. Body much enlarged. Pale carmine brown, streaked reticulate mottled in darker. Dorsal line dark, geminate cinctured, subdorsal carmine centered. 8d line similar, lateral line a broad dark clavate shade, touching spiracles short edged, reticulate, not strong, subventral band on head pale, slightly carmine; subventral distinct reticulate like dorsal. Tubercles highest elevated white with black hair dot, a darker shade about 1 extending down 11, slightly oblique, with joined across dorsum. 12 below middle of 13th segment brown, edged by 8d line which is pale by contrast, not corrugated. Setae pale, few ds.

Proserpinaca

Oncophanes (pencil sketch of 5) 6 Oncophanes carolinianus
Leaf mine in spring plant with siliceous granules like PG but different. Golden Col (grains) July 16, 1901
Large blotch mine under lower epidermis but the mine became a little more like yellow. Setae all brown on both sides. (To Black)
Hd flattened moderately, lobed, 11 broad, sharp but rounded to a pointed point at vertex of pale brown mouth & sutures brown. Body means cylindrical, segs angulated, rounded in shield. Tubercles setae both pale, somewhat developed, several with even dorsally. The feet short oblique extended, abd 7-9, 13 sessile with a little bunch of bristles. Setae 1 vertex & 2 oblique. All pale yellowish, no markings, legs subequal. Cauda 1 oblique a little longer.
Aug 11 1901 Cat 17907

1077 Geranium sp

Leaf mine on wild geranium? Golden Col July 16.
Large blotch mine at apex of lobed leaf, epidermis thin brown forming a narrow mine. Frass contained. Curve in shape thin stiff web like pale but transparent.
Aug 23 Cat 17800



1078

Cass cutters on Shirley wild geranium, a shallow blotch in one corner of leaf through to root side, frass contained in one corner. Larva entered pale yellow as seen in cut. (To Black)



1079

Blotch mine in wild geranium, Golden Col, July 16 1901
Large blotch, epidermis both brown, thin white space forming a narrow hollow. Frass contained. Mine to several leaves in a curve 1st leaf, diameter 1/2 in 2. A high but 0 reaching natural width pale testaceous, eyes a large black patch just over Body slender, tuberculiform, subequal, tapering. Feet 13 rounded not sharp orally, many cylindrical. Dorsum of 1 irregular corrugated, then angulated granular. Pale yellowish white. The feet very long, long, distal 5-jointed, abd. small 7-10, 13 no bristles. Setae pale rather robust several with, tubercles striate. Seg last slightly blotched in whitish.



1080

atadon egg, perhaps *Coccidius dimidiatus* on aspen
cottonwood. Sailors col. Slight on back of leaf.
Faintly marked, some part of spines white not shiny.
Dorsal part covered with small white granules.
arranged around a central line, a little denser
above center which is narrower than with a small
central white space D. 1.4 mm.

Hatched July 16 Hd. 65 um bilobed free, shining black to
brown. Body 1.5 mm. Body 1.5 mm. Body 1.5 mm.
Red cylindrical normal. anal feet elevated, legs
subcylindrical. white, shiny, 0.5 mm. anal feet flat.
The feet & tubercles shining black. Faint brown shading
d. on 4, 5, 6 & 12 and distinct s-v reddish lines 1-12
s-v the whole length. Tubercles normal i and iii, sp
in larger, i a bit separate, iv behind spread, v subsp.
tubercles distant, pointed black setae pale obscure.
12 slightly enlarged, i-v 13 and 14 a square; 11 rather weak.
All patches, marked ~~the~~ part of leaf sitting by them.

Next July 18 Hd 1.2 mm. Body 1.5 mm. Body 1.5 mm.
ventral notch, pleural tube, pale bottom ventral
a little narrower. Tipped in black brown scales dark
dorsal cylindrical 12 slightly enlarged dorsally
anal feet small, approximate, but small. white
green. mouth, a white set line. Subventral feet
small deep brown the anal ones are not narrowly
lined with the color. The feet black. Tubercles
longitudinal, white almost cylindrical with
subapical. legs irregularly annulate. setae
annulate no stinks for black elevated.

Next July 21 Hd 1.5 mm. Body 1.5 mm. Body 1.5 mm.
dark brown. mouth brown, setae 10 and 11 annu-
laid from above dark, scales blackish. Body cylindrical
normal, 12 with a small black & brown. Scales
cylindrical shaded on dorsum and along oblique line.
s-v. Hatched with brown, shiny brown in outline
of feet. anal feet small, anal brown line, spiracles
small, black ringed. legs annulate, slightly shiny.
black & very slight annulate swelling.

Next July 23 Hd 2.5 mm. Body 2.5 mm. Body 2.5 mm.

From the last sailing, but were Russia.

Sides, water, slightly notched. Pale green, blotched with
dull red on the sides below and almost smooth shading
upward. Body cylindrical, 6 with a central slight
collar elevation 2 with a brown line running. Scales
space between spiracles of feet broad. Head a purple
brown shading upward. Scales brown, shiny, more distinct in
hairs and quite dark in the elevation around 6.
Tubercles feet and abd. outwardly dark purple brown.
Spiracles black ringed. Tubercles slightly elevated, green.
anal feet small, used. Venter brownish pale green.
The transverse purple line on 6 & 12 yet more distinct.
Later dull brown shading up, many to 4 line, the purple
dorsal ridges of 6 and 12 are slightly relieved & whitish.

Next July 24 Hd 3.5 mm. Body 3.5 mm. Body 3.5 mm.
flattened in front, sides narrowed a little above
and slightly bilobed, shiny, mouth yellowish green
from a faint central line. The 5 and 12 shaded
in dark brown red; anal feet dark red; diagonal
slightly, making the anal shadow whitish red. Scales
greenish. Body cylindrical, 6 & 12 with brown collar and
dorsal humps, anal feet rounded, mouth small.
anal feet. Feet subcylindrical equal. The anal feet
a little smaller, used. Dorsum shaded in brown
brown annulate with grayish, only a line of green
in the intermediate dorsum. Venter narrowly green.
The feet and brown. feet 11 and 12 the other legs as
with a purple brown dark outwardly. Tubercles
narrowly pale gray, spotted streaked in purple
black. Tubercles whitish with black hair setae. a
little elevated, distinct, normal. Spiracles large
white, black ringed. The black annulate a line
is an irregular black band from behind spread on
dorsum and an elongate spot between i and iii.
2-5 is more reddish than 6-12 having red gray
hump of 12 is reddish & the gray annulate of base
of the collar remaining a faint 7-11 with whitish
at spiracles. Later 2-6 a little smaller & darker than
rest of body, a slight white and pale on side. Feet all
blackish except narrowly v with brown marks but
no distinct, different reddish tint. anal feet with a
narrow red line. The July 25 Hd 4.5 mm. Body 4.5 mm. Body 4.5 mm.
N. grisea 25th (next) 25th 1914

1081

Leaf miner in alder (Picea) Col. July 18 1901
a large brown opaque blotch the
leaf below, through. Some both sides
higher easily. Pines contained.
Several larvae in a mine.
at flattened, i.e. a rounded reaching
outward, whitish smooth brown, pale
black with a brown line from base
down the narrow edge. Head, thorax
greenish, 2-3 large, 4-5 small. The
gradually larger to middle & then
again to 13. which is short narrow
divided. Feet moderate, normal.

Head, crochets in a neat elliptical unit equal from
sides on both sides of 7-10, 11-13 on each side only.
The feet slender cutting and little joint marked
on 1. primarily brownish tipped. Translucent green
white, no marks on thorax. A slight depression of
tubercles obsolete. setae white, redness, a few visible.

1082

Alpines on fir wood (Ephedra) Pine Grove Col. July 18
1901. Almost certainly = A. longicornis. Whitish
fine transverse black lines and with many
granulated bands and white or spots. Head
like large, ventral dentate. Larva cut by a
diffuse white ed band except on 12. Head white
black spotted. Tubercles rounded, moderate
and prominent through some a little pointed.
Setae long, pale. Joint cuticular soft wood. Made
a good pupa (opened May 9 1902). Only one larva
found. Larva was A. ridingsii.

Yucca involuta

1083

Osteoplyrid on red gum (Astragalus) Pine Grove Col. July 18 1901. Not seen in last 10
1st round, not seen, just before. Larva pale head
cylindrical normal, green, a dull crimson dorsal
line with a small oblique sd dark on 6, dark on 14
& white sd line 2 part - 13 and end a narrow sd
the large and part on each seg. oblique, tubercles
small, hair single, i ii separate, iii iv approx.
v and dorsal to iv. On thorax i+ii, ii+iii, iv+V
numerous fine short hairs, shorter & easily
differentiated from the 10 on bulbous tipped. These
all white & short, as long as in comparison.
Aug 25 1901 Cat 17893 *Platygaster cosmodactyla*

1084 *Aletris Hayden* Pine Grove Col. July 19 1901

Egg by 1st pupa 17822 Pine Grove Col. July 19 1901. Larva
more rolling than elliptical, nearly spherical
one dimpled a little less but no flattening
or truncation. About 4 longitudinal lines distinct
into running to the ante-ventral line and where
they meet in a slightly raised whitish line
over. And then still strongly as a ridge which
represents the edge of obsolete truncation. End
reticulate. Ribs nearly straight dotted (and
with 2 rows of pores. Cross striae fine and distinct
not very distinct. Pale green. At the 1st seg. 1st
pupa below 2 white obscurely measurable
Hatched Aug 4 1st 35 rounded, smooth each flat
translucent black brown. Larva & anterior tubercles
but cylindrical, normal, moderately elongate. Head
2-4 and 10-12 look a little darker and are brown
yellowish brown transverse bands on feet below of legs
4-9 joined by a sd line that is wide next to joint and
and nearly detached in mid run of seg, a lat. line
regular line, exactly midway which length but
small blotched in center & some for a few seg.

24 & 10-13 recorded on the yellowish with clouded
 d. & d. purple brown line. Cells and teeth dark
 andish shaded. Feet dark, some black, the 1st, 2
 head head to look like on black head. Feet 10
 more pale esp. ventrally. Tubercles & other
 structures as pale. (all with yellow, slightly
 shaded, esp. 14 & 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494, 1495, 1496, 1497, 1498, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521, 1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546, 1547, 1548, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1626, 1627, 1628, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638, 1639, 1640, 1641, 1642, 1643, 1644, 1645, 1646, 1647, 1648, 1649, 1650, 1651, 1652, 1653, 1654, 1655, 1656, 1657, 1658, 1659, 1660, 1661, 1662, 1663, 1664, 1665, 1666, 1667, 1668, 1669, 1670, 1671, 1672, 1673, 1674, 1675, 1676, 1677, 1678, 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687, 1688, 1689, 1690, 1691, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1707, 1708, 1709, 1710, 1711, 1712, 1713, 1714, 1715, 1716, 1717, 1718, 1719, 1720, 1721, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729, 1730, 1731, 1732, 1733, 1734, 1735, 1736, 1737, 1738, 1739, 1740, 1741, 1742, 1743, 1744, 1745, 1746, 1747, 1748, 1749, 1750, 1751, 1752, 1753, 1754, 1755, 1756, 1757, 1758, 1759, 1760, 1761, 1762, 1763, 1764, 1765, 1766, 1767, 1768, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1776, 1777, 1778, 1779, 1780, 1781, 1782, 1783, 1784, 1785, 1786, 1787, 1788, 1789, 1790, 1791, 1792, 1793, 1794, 1795, 1796, 1797, 1798, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226,

Chamaenerion angustifolium

1091

Alypsia on Epilobium (not 1082) but on same plant
Half way House, above Manitow, Col. July 21, 1901.
Red rounded lobes, erect, white, thickened covered with
rather large black spots and a few small ones.
A yellow shade over vertex of lobes and at
base of antennae. Root, cylindrical, normal.
Cortiform, the slightly enlarged dorsally.
Red, white with a broad yellow diffuse shade
Pd (ii) and distally (v) the former scarcely dark
orange on the lower 12. Tabular long black
but none have not elevated into cune. Many
confused irregular whitish black marks.
Cov. white or spots at all, black linear sin
venter less heavily marked. Old feet black
at base feet colored outwardly. Thin feet black.
Setae long white. Black from a series of broken
line and dots, a heavy geminate d. line, widened
a latate part on sep and with a narrow under
apex projecting but, more sparsely lined
when the yellow is, sides latate quite
heavily marked; s-r region strongly marked
esp. above feet (see above)

Det. May 4 1902 C. W. W. 18146

1092

Blotch mines in Epilobium, linear, along edge
leaf for some distance then ending
in a large blotch to both margins, the
trace in scattered dots. Larva robust
minors thickened with granulate brown
col. (Aug 2 - to black). (Half way House, Col.)

1093

Trilobed in aspen cottonwood Half way House, Col.
July 21, 1901. Found in 1 but shed during summer.
Was all minors, feet pale, a dorsal yellow patch
on 4-5 and on Sept. - 9-10 and. Horn black. Tail large
Stage II. 1st round, erect stylized lobes, dark brown brown
Red normal, all dark brown brown, yellow rounded
d patch on 4-5 and Sept-9-10 and. Feet whitish,
lobes with 2 white rings. Setae short stiff black
from large but inconspicuous conical tubercles.
Feet and about black sd prothor. brown spinose.
(Dorsal tube, the 22 thin gutally)
Another hairy col. same, off shoot, mid late stage July 30
H. 2.5 horn black, d patch 2-4 are spring horn. Large
pointed elliptical patch 5-11, with 11-13, all dark
brown yellow edged, midab one pale spotted
But last stage Aug 4. Setae curvilinear, 1 yellow,
middle one double in length on edge and
yellow orange spotted. Big ventral spots 11-13.
Sides green, spot dark granulate brown on white shade

1094

Miners on meadow near Lake Umbagog. Above White Pine
a rock of leaf and much long narrow ones on
top (To Bush). Pine Grove Col. July 23, 1901
Agallia malvaceae (collected)

1095

On case under on logwood, white
banded *Corvus* Pine Grove, Col.
July 23, 1901 (To Bush)
Larva is retorted, flattened, 2 on each
brown dorsal, 5 on each, rest flat,
slight upward whitish, a row of
large, red black spots 5-11 ventrally

1096

Strophomena on aspen cottonwood Pine Grove, Col. July
23, 1901. 1st inst. body green with broad whitish
yellow and band 2-13. Slight trace of whitish
dorsal markings in dorsal space. (Collected)

Seton is a distinct narrow in line, & smooth, just
below spiracle, & fine. V. narrow distinct, dark band
shaded
Seton Aug 8, 1901 Cat. 17973

173

1097 *Alliaria myctaginea*

Leaf miner? = Cat. nos 17998-9 on *Alliaria* fleshy broad
opposite leaves plant Saluda Col. July 25, 1901

Large blotch mine under upper epidermis
reaching inward through. Surface fine & low
Pass indicated a c. behind by end of larva.
A small flat, ΔΔ reaching the broad middle
red Δ. Much small; pale brown, rather
of Δ form, cells small black. Body weak.
flattened 2 small than 3, 4 & 5 equal.
The slight enlargements to middle and a
little beyond to tail. No angulation from
sitting Cat. post. 13 marks, 1st to 12

shaped, smaller than petiole, up flattened
moniliform. Two far small, slender side-
arm. Lab on 7-10 slender, papilion with a
shaped enlargement at tip, a shape like the feet in width
in feet 13. Frame, pale yellow, whitish petiole & v. narrow
no shade

1098, Cat. Sept 3, 1901 Cat. 18053

Seton with #1097 Saluda and later Col. July 25, 1901
Synanthropic leaf miner, flattened, elliptical
1st rounded, later elongate & reaching large membranous
outlet Δ, showing brown, yellow darker, central
concolorous & broad 12. Head being the 3 or 4 from vent
on 5-12 from vent to 13 a large diffuse vent. Ed
vent v-shaped, lat oblique, s-v narrow oblique,
low & small, all large head pale whitish
many haired with strong brown (black) tipped
bristles and a few large pale hairs, and 1 or 2 fine
2 white warts. Diffuse black d. lat. Ring 1 or 2
all the other of face between the warts slender
pale brick red except between 10 & 11 where whitish
prevails. Feet on 7-10 13 normal short with
a few hairs ventrally. Spiracles round pale
conical centrally. (See plate) Δ. Black band narrow
extending with faint white (?) white spots the white stage
through center 10 & 11; a pale calum band; dark black
extending round, & white, a narrow calum line; slightly
black. Small white spots, 5 or 6 black like dotted
and distinct white ventral spots. The v. part very thin
in some sections white like dark line

1099

[illegible]

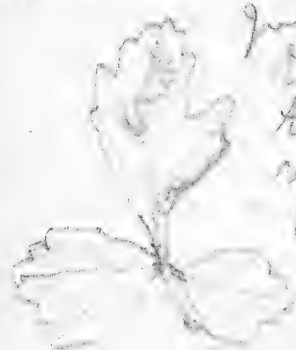
1150

On 10/10/71 plants Saluda Co., July 23 1941
Perhaps a var. of 1071. Similar habit of lower
but somewhat like like opposite stem.
St. lobes with brown mottling, 2 short buds
in axils - each bud and may about 1.
Another habit, small, 10-12 many leaved. The
above is small, 10-12 long, 10-12 very and one smaller
and above, two or both several leaved, one ant.
one post, VII several leaved. Triterapom. sep.
subequal feet normal whitish undid. dorsal
with yellow line the lower on each side
black + obscure; a faintish brown blotchy
unmarked line, then an irregular black
obscure yellow line along III and IV. S. 1
fold yellowish, ventral white dotted tubercles
black III large. Shield concolorous with black
footpads.

Box 217 1403 24-17972

101

Leptoclelea minus in poison oak, Salida Cal
July 25 1901. Larvae slightly flattened
translucent pale green, shiny. 1st
translucent colorless. Segs tapering
uniform, thickest behind the middle
(To Hensche)



1162

Selected? on dark black oak, Allegheny I 3 Aug 7, 1912
Spine & petiole with one row of leaf and branch
below; from a rock. Leaves not dissected, not tubed.
Hd green, half flesh, 3 narrow ^{not} lobes, a small
black spot on ii, a long one on iii, two spots on lateral
above the small black cells; labrum whitish.
Body slender, smooth, occasional flattened, not at all.
Green, faint line with white in irregular, irregular
edged line as with no lines. Ant 5th last, 1st, 2nd,
only trace of any line before then. Prothorax yellowish
folded. Third compressed and frequently curved.
Hind tubular & short, compressed, not at all
the tubular whitish with black dots, rather rather
long whitish. i + v approximate but distinctly
separate, v cont. and joined to iv. i and ii in line
on the i and ii, a black long, but on prothorax
i + v and on ii + v. Spinal brown pale yellowish.
3rd very slightly large & faint, a trace of the collar
structure but no marking.

Das Kapital Teil 1 (Marx) 1867

Det. 2002 1902 cat no 18135

1105

On white oak and rose in red oak
 Bellport N.J., Aug 4, 1901. Leaf mostly
 folded on rose stem, all the leaves
 have distinct yellowish, round, white
 warts fastened by white all along edge
 and little holes eaten about the margin
 clear through. Larva within eat out the
 woody part; green contained. 1st round, flattened
 oblique crest, 5 h's in central S, apex in 2. Pale yellow
 beneath squamous brown, with distinct black. Body
 rather thick, round flattened, 3 large the size next
 equal tapering out just to 13 which is rather broad
 divided. Legs thick? 2 annulate, the sides are folded
 annulate brownish in striae and later the red
 some opaque pale yellow. 2 round brown, the upper part
 cannot be fast along side of 2 round in pale in the
 middle, along thickened line and 24, as that the
 same round in middle. Tubercles slender, rather
 long and pale. The feet distinct rather short, black, all
 short, with developed on 7-9 & 13 only. 1 dorsal VII, III
 round, 10 & 11 annulate, curved in line, not one strong.
 11 & 12 rather annulate, 11 small, 12 & 13 approximate. Later
 dark brownish brown, strongly lined with pale
 white and 2 dorsal round. Round segment very.

1106

On white oak like 1105 but leaf and folded Bellport N.J.
 Sept 21 1901. A minute winding tortle on back of leaf
 of rose and oak, found. Green, fastened to edge
 which is greenish, a yellow feet over at the end
 salmon red, 2 with shield enlarged, head opposite, third
 and 2 feet greenish. On 3 11 long with black ring.
 10 & 11 approximate in line. Feet annulate, all
 purplish red. (see bloom)

1107

Arctia from Mr. Fisher Atlantic City March 31 1902
 Hd 3 mm shiny black, spiracles whitish. Body black
 a series of d. oblique pale yellow spot below II, prothoracic
 joint in a slender line between I, a streak on 1-4
 small almost minute black a pale yellow spot on 10
 II large with large shiny black; III-VI small all
 orange yellow base of III & IV shiny. Spiracles orange
 yellow. Hair all black short bristles, well marked
 thin feet black abd orange yellow black of body
 smooth on velvety & granular.

1108

Agryia hirsuta, found on leaves from C.W. Arnold
 Dayton, Pa. eating live oak, water oak and rose.
 very variable. Hd all dark coral red, some orange
 red. Cerviculi 2 & 3 long black. Tufts on
 5-8 large, knob-like white, gray pale yellow
 or bright yellow, large, alike. Feet tubercles coral
 red. Vents pale a dark orange red. Scales gray
 to spiracles, with a black d. band 9-12 & lower
 narrow black oblique band. Ventrals whitish very yellow
 band. Some have base of 2nd band, narrow faint
 distinct, darker & orange II vent. Band present only
 in the palest larvae. Vents 8 & 10 yellow, 5 &
 6 gray faint granular, feet reddish reddish, ventrals
 pale yellowish. Hd orange ligulate on 9 5 & 6 feet
 more yellowish. Ventrals gray a dark one. C. 5th
 coral red.

387 Oct Cat 18096-8

1109 =

Eggs from 82 18092-1 from Mrs. H.D. Merrill, New Brighton, Pa. Ellipsoidal, very flattened on 2 sides but somewhat rounded. One end slightly depressed the other rounded. Translucent. Young pale yellow, later turning greenish. 6 x 5 x 3 mm. Hatched Apr 28 not having any color but the pale yellow. 1st 3 rounded, slightly lobed, each free, full, pale bottom. Mouth brown, small. Black, segmented. Body somewhat a brown, feet short, all pale yellow with some red. Setae long, distinct. Nucha long, with small tuft. Tubercles in small. All joint and sharp, reducing the work. It is *Quadriloba intermedia* already published. Mr. Merrill sent a second pair with eggs Cat 18101-2

1110

Eggs by 72 18103-4 *Declina glomerata* from H.D. Merrill New Brighton, Pa. Taken Apr 25 1902: eggs laid Apr 27. Ellipsoidal, very strongly flattened on 2 sides. Irregularly concave & hollowed but rounded. Translucent slightly rounded, other end depressed but not rounded. Whole egg is as flat. Dull whitish yellow. Not covered with large red spots confluent and covering most of surface. No setae, all fine oblique, almost parallel, not shining. 6 x 4 x 25 mm. Hatched May 3 45 mm. oblong lateral wings by dorsal & anal, and 2 small lateral. Setae long. Yellow. Petioles long black. Mouth brown. Red. Small whitish yellow tubercles, each dark, prominent oblong, feet fine and solid, 5 or 6 feet shading to brownish. Not shining. Slightly crenulate. Seg in 5 lines. Golden head. Tubercles by mouth in crenulations, brownish. Setae very short, capitate, dark. Head feet extended laterally; anal feet somewhat. No shield, no markings.

1111

1903

♀ *Litodactylus hyacinthi* Hal. from larvae in Victoria Bay collected by Mrs. Schwan on *Quadriloba lanuginosa* (Cat. no. 18107) laid infertile eggs May 6 1902. 2/3 spherical with 1/3 flat, dull whitish green, uniform. Ovaries long from 2, mostly regularly crenulate, the setae very slightly raised, broad, with brown at the ends. Looking like white dots. Head. Surface is bifid furrowed. D.L. mm H. 65 mm. Hd from corner 2 mm rounded D. hypostome wide and rounded above, brown, lobed. Schwan says the larva was attenuated behind, anal feet not wide, green marked with dark leaf green.

whitish. No markings below. Setae short whitish. The
 pubescence invisible. Late in A. spot faded to a faint
 orange shade but leaving a dark dot on it. On the
 pale side a narrow white line appeared S-V.
 Pests on skin body curled. Spots the head above on
 middle of body elevated. Same position as in all legs
 but not in the leg of larva.
 Head body 23.5. Rounder higher than wide rather
 flattened. Slightly notched. Small slightly depressed
 labrum. Inset at sides converging with rounded
 forming a rounded projecting mouth. Pale green
 shining. Slightly yellow. Below rounded. A line
 color side on. Antennae a rounded black patch on
 outer of 4th. on eye and ending distal by 1 pair of
 large feet than 1st antennae. Small slender pale
 Body cylindrical rounded, 12 ribs a dorsal curved line
 faint a low subventral line. 3. 1st segment a
 third, else subequal. 2 subequal. Then the head.
 Seg. 1-5-6-7-8-9-10-11-12. rounded 2 the highest. Then
 dorsal whitish green the feet very pale. On 1st stage
 yellow, white a minute dot on 1st and on 2nd upper edge.
 Dorsal dorsally a seg. touching the yellow on 3rd rounded
 on 6-11, widened lat. on 2. But on other seg. straight on 1st
 lower edge three fine lateral lines. Above 1st lat. as
 superior. Pale yellow, the feet the upper in part confluent
 with it a rounded 1. The 3 separate of seg. 10-11-12
 of the transverse great inter. a broken, subventral line.
 narrow pale wavy line. Dorsal curved line dots
 dark red above on seg. distinct on 3-8, dorsal 9-12 and
 on the slightly raised 2 rounded. a single spot on the
 superior. The lower on 12 tubercle in middle. Setae
 prominent, the dorsal ones decumbent. On other the
 spots large & simple on 3-10-12. in one all absent even on 12.
 The pubescence below had many white glands with faint
 orange of color. Line all yellow except edge of 1st
 vent. red spots; in one on 1st complete line of dark red
 broken 2nd & lower 1st line. 3 dark red spots long &
 yellow all 4 dorsal except 1st line. Another all shaded
 with dark orange-red missing 1st line. 12 rounded 1 and
 forming great blotches over the sides.
 Hatched May 21

1112
 Egg by 22 Thelina ferruginea from H.S. Williams
 Rockledge Fla. taken and laying May 16, 1902.
 Elliptical the narrow diameter only slightly flattened
 in a small end on the middle of the sides. The
 calyx forming a decided rim but elevated ventral
 depressed and rounded, blunt like the other end.
 Surface smooth except for very fine, roundly beaded
 convoluted distinct reticulation all over surface. Rea-
 ming a little larger at the anteroventral
 end. Minute pores lat angles dark whitish in the
 shadow 9 x .6 x .5. Dimensions given above. (X-ray
 dull white).
 Hatched May 21. Head rounded. Head great feet, rather
 large mouth jointed, dull dark brown, dorsal on the
 outer. Bright on face. Dorsal; eye 6-8-10. 3 mm
 Body cylindrical, rounded, elongate. Feet round
 slender, and very pale. Head 1st stage slightly enlarged
 ventral. Slightly white, a shaded dark gray line
 a dorsal line a narrow one almost at end.
 A subventral dark brown narrow one over dorsal
 1st line. Tubercle at end but anteroventral narrow
 and confluent in incisions. A circular S-V band
 granular but seg. maculately joined. A narrow
 long seg. ventral elongated spots on legs. seg.
 feet all pale. No tubercle. Setae short white
 tubercle. Imperfectly. Segs showing rather un-
 evenness annulate. (Slightly white line)
 Head May 21. Head 5 mm rounded. Head large. Head
 not enlarging before, a little longer than wide, white.
 a faint gray shade on vertex. Tubercle dark a also
 anterior of 2 and sculla. Head rounded, rounded, whitish
 with a little gray tint; diffuse broad pale ventral
 black tubercle 1 and 2 bands 1 a little. Setae
 lat. small broken into dashes. A narrow ventral and
 gray S-V band. Feet and venter pale, tubercle dark
 1st stage pale. Segs faintly gray annulate. Tubercle
 nearly 1st faint grayish brown being light whitish gray
 Head June 2. Head 4 mm rounded. Head moderate, white
 very faint grayish reticulate small black dots
 on the tubercle and at apex of 4. Body annulate
 seg. 1st irregularly annulate, gray to white

11264

For the purpose of
the present, I have
been obliged to
write this letter in
a very hurried manner
and I am sure that
it will be found to
be very imperfect.
I am, however, sure
that it will be found
to be of some use
to you. I am, Sir,
very respectfully,
Your obedient servant,
J. H. P.

190 55 II Hds 13 blackish brown eyes & ant. black, latter with
 geniculate tips. Ant. not bad, tube not long, rather firm
 and seg. flattened. Hair as in Ant. - finger slender
 Antennal brush of fine hairs at middle of the upper joint
 ventral brush small. comb of a few teeth in angle base.

#4 In the leafy young pool from 21 with no 5. Small I
 black-headed larvae like *Uranotaenia* floating rather
 flatly tube not long. Thorax rounded, glabrous but
 flattened dorsally. Abdomen cylindrical, brownish
 flattened d. a little smaller than head. anal seg.
 directed obliquely downward, undulate, furnished obliquely
 with a dorsal plate (young) a tuft of dark d.
 black hair and a small ventral brush to ^{ventral} ~~ventral~~ ^{ventral} ~~ventral~~
 hair. Cervical seg. bearing air tube cone-
 form, not over 3x as long as wide, base colored
 terminal 4 with a narrow black impunctated
 ring; sides seg with a comb of 7 simple spines
 tip. cold hair fine, blackish. Anterior, small
 & short. post. Anal finger slender, collets moderate
 open hair post. Terminal seg sharply limited, a little obliquely
 but mostly shaded with diffuse color (primaries)
 situated in dorsal creases; also translucent. Hds. 25+
 those of 1st & 2nd seg about like thorax, 3rd smaller
 Hd rounded elongate, large than wide, undulate, black
 heavily impunctated; antennae long slender, edged
 black with normal terminal hair and a slight tuft
 at about the middle. Eyes inconspicuous, rounded
 front brush small normal. No comb-like hair on hd.)

III June 21-22 with *Uranotaenia* like no 3. Hds 8 mm
 first thorax small slender, short, with black at terminal tuft, pale at base
 black x 3 slightly uniform, blackish; anal seg flattened; not shaded in brown
 normal seg 7 Hds 12+ like no 8 and finger slender & rather long. (Hds 13)

#5 Surface wiggles resembling *Trichoptera*. Tube scabrous
 surface granular. frequently lively wiggling but go forward
 not backward like mosquito. wiggles full touch side
 when they bend in a \sim the angle of body touching
 side and held by surface tension. Not in them
 but dorsal and ventral part with activity from a
 center which may be surface particles. Cylindrical,
 a little flattened dors. ventrally. Thorax small wider
 than abdomen. Anterior side thick long, separate; meso
 and meta thorax slightly enlarged, conjoined and showing
 a distinct suture in mesothorax. a little longer than
 wide. abd seg 1-8 subequal wider than long, the 8th
 bearing foot the breathing apparatus d. furnished with
 thin short spine-shaped prongs before & the longer
 one behind, scabrous not produced into a tube,
 bearing with long round hairs but not in tube.

finger of fine hairs (short with a
 border of a thin membrane. Anal segment very
 slender, distinguished with a bunch of black hairs at
 base each side and a radiating line at tip, di-
 rected backward. No dorsal or lat process in body but
 some 2 or over, soft a long tuft on prothorax & below.
 The body is colored nearly uniform dark olive brown
 with an irregular dorsal yellowish red dash & abd.
 seg 2-4 at the place where the body is bent in rest.
 Hd small, rounded, head glabrous with slender, curved
 moderate antennae, all dark blackish brown.
 In feeding the antennae are curved over mouth, and a pair of
 red circular palpi are expanded to catch with small mouth
 muscles concealed sides and feeding. dorsal side & lat
 light brown. On 1st & 2d abd seg 1st & 2d are a pair of dorsal
 false feet like those of some fly larvae and small red
 oblique prongs on the 3-7th seg. and approximately placed
 these are used in clinging up the object at the edge against
 which the surface film rises. They are dark tipped
 with plants. Pulvated from 28 big galls

#6 One of this was pupated June 22. Anal seg complete,
 a ventral brush comb 2 teeth wide in middle and
 about 17 transversely. Pale rather small normal with
 long air tubes, slender head, slight large at tip. Ant
 seg 7 and 8 not retracted back. (Ant seg 7 & 8)

#7 Another was pupated June 22. Ant seg 7 & 8
 #8 Several like and separated out from a lot pupated from
 same host June 24. Hds 1.25 Hd undulate before
 rounded 1/2 antennae long slender, oblique tapering vertex
 a small tuft before middle and terminal spin. longish
 blackish. No lat hairs eyes long black transverse (redish)
 but long normal. The 1st abdominal seg subequal
 moderate less post. comb a pair of 2 sharp spines about 3
 mm wide; Ant seg about 3x as long as wide, slightly fus-
 iform, blackish bearing a posterior double posterior
 tuft. Anal segment normal with dorsal plate undulate
 bordered laterally. Hair single, transparent, thin, bare
 more rounded, at caudal dark. Ant seg 1st side
 (Hds 1.25) (Hds 1.25) (Hds 1.25) (Hds 1.25) (Hds 1.25)

#9 Two more like 8 separated out from same lot July 8 when in
 last stage. One pupated July 9. Ant seg 7 & 8. (Hds 1.25)

1117

Egg by ♀ Luper 18158 Centre Harbor N.H., laid June 21-22 1902
 Elliptical, no truncate much less but not flattening, de-
 pressed and rounded, slight depression, other end strongly
 and strongly truncate more or less obliquely. Retic-
 distinct, regular hexagonal, broad, forming abundant
 rounded shallow pits between, arranged in straight lines
 on 1/2 of egg toward truncate end, simply reticulate on
 other 1/2. Truncation bipinnate reticulate, both smooth
 and distinct lines, the edge rounded. Corner of pits, having
 white dots for the pores raised and on the truncation
 more conspicuous than the pits. 9x5x8 mm. Pale
 yellow slightly shining under simple lens looks almost
 greenish from the pits. Good adhesion, under object.
 Turned red at the truncate end.
 Hatched white, at Littleton. Zella gave me good food

1118

Eggs by G. H. H. 1892. Center Harbor N.H. June 23 1902
 5th inst. the base scarcely flattened, slightly longer than
 wide, very white, almost white, slightly translucent
 at ends, mostly by becoming confluent in center at
 terminal by stopping at center of which is slightly depressed
 into low, dark, broad, up. cross. Striae. Scales a little
 irregular and broad and often considerably oblique
 flattened by pressure of wing. Diap. 6 mm
 at end of 1st inst. at 1st inst. Hds. 3 with red black
 slightly bluish along body, red, large, rather strongly (red)
 feet 12 slightly bluish, a small white area of plate. Body
 translucent, green from food (green) shades with brown more
 so feet tan and end being slightly attenuated, green
 tubercles very small black, rounded, many in number
 on legs except on 12. Setae small, brown. Feet usual
 short, the ones pointed backward.

2nd inst. 4th inst. along body. Body center from 12 slightly
 enlarged all small, bluish, rounded. Setae and
 legs tubercles black. Setae distinct. Pale on legs.

3rd inst. Hds. 6 Hatched 1st inst. along body. Body dark, broad
 The 7th inst. dark brown shaded across the center
 of cap. Head white, feet enlarged, setae distinct, bluish
 tubercles large. Green of a light shade of blue, with
 distinct, attenuated, slightly enlarged in 12
 a square. Head in 12. 1st inst. all white and not
 2nd inst. 10 to dark brown. Shiny, apex ends in 12 and
 anal tip black. Head apical with a pale transverse
 line on head edge. Body elongated, dark black, greenish over
 brown and pale 2-4. 12 slightly enlarged with a red
 wavy-shaped tubercle, the faint feet. Tubercles large
 bluish, black, setae coarse and distinct. 12 large
 than the black apical, the pale area middle. Feet in
 of a brown 12 lines containing the tubercles of joint 12.
 4th inst. Hds. 1.3 rounded apex 12 shiny brown black
 tubercles and sides distinct (pale) tubercles 12 shiny
 brown black, marked by some distinct line feet with
 a broad pale tubercle on 12. Tubercles on feet. Setae
 small 12. Large pale centrally mottled with dark
 black at feet. Tubercles small area edged by a
 dark line, diffuse pale pinkish band, scattered
 on head of 12. Tubercles of 12 tubercles broad and 12
 in the slight middle. Color dark gray-brown, not shiny

5th inst. whitish, greenish. Color uniform in 12.
 Space 1 elsewhere mottled dotted in pale, not
 the pale tubercles near the edges of a broad pale
 d. space not yet defined. Tubercles large black
 polished but white, feet, is above center of space
 setae dark, rather short.
 6th inst. Hds. 2.5 Dark, shiny fine obscure dark
 tubercles in a brown ground, area about 1 and 12
 pale, like pale, short. 12 black, feet 12 pinkish brown
 slightly mottled, contrasted. A faint bisecting line
 on 12 slightly flattened, 2 obscure enlarged. D. Space
 broadly pale, pinkish, white, reddish, mottled &
 streaked in pinkish brown, a darker central shade
 D. Space widened on legs 12, on 12 when it becomes
 thickly obscure. Setae pinkish brown, mottled dotted
 in tubercles. 3-4 & 5 reddish olivaceous, anal plate
 broadly pinkish, black on lat. edges. Tubercles large
 black, polished, is above middle of space. Setae
 black, feet small, short, feet plate black, small
 anteriorly situated.

95-270

4/5

Saturday
April 5

1693 121
- 1691

1071 = 1100
1071

1080 - 0801
1082 - 2301
1084 - 6801
1086 - 1601
1088 - 2601

The exact derivation of the term "coasting" is involved in some obscurity, but there is nothing doubtful as to the advantages of coasting as demonstrated by the COLUMBIA COASTER BRAKE.

1877-TWENTY FIFTH YEAR-1902

HOME OFFICE, HARTFORD, CONN.

Columbia
AND
HARTFORD
BICYCLES

#13 Little worms wriggling at bottom of rain pool on a rock. Pupae floating stiff, with air tubes. (See slide)

#14 Big *canadensis* collected from spring pool July 14. Tube about $2\frac{1}{2} \times 1$ conic fusiform brown, the tip flaps black, anal seg. distended at least d. with tufts & v. brush. Ant. with tufts at middle, slender white on basal half, dark at outer half. Mesothoracic hair lat tufts from bottom like tubercle, meta-thor. has 2 such; abd. hairs slight subequal, less post. Throat looks hairy. Body all decolored in brown. Hd pale brown eyes black. Pupa July 16. Out July 19. *Culex canadensis*

#15 Ten *Culex* larvae in a closed, algae pool on little islands in the lake with one large dark anopheline. Hd 1.2 like *territans* but antennae absent! Out July 28. Seven with hds. 8, dark brown like #3. Two with hd. 5, dark brown except tho. i. front; no with red eyes. Antennae black, narrowly pale in middle tufts well advanced. Tube long slender. Anopheline looks dark but is filled with green algae and is really pale with white dotted d. stripe. Hd almost solidly brown black, on the sides paler; antennae white with black tip. Pupa July 19. Out June 23. *prunetifemur*

#16-22 From rock pool covered with sticks on wooded island. Water clean and cold, part of lake.
#16 Hd. 8 nearly circular pale brown eyes transverse & black, antennae slender all blackish. Tufts black at outer $\frac{1}{2}$ the tip smaller. Body brown shaded, abd. hairs slight after first 2 segs. Tube long about 5×1 moderate slender scarcely tapering. Anal seg. long with a dorsal elliptical plate strongly infuscated like tube, tufts and brush slight. Lat. ends slight pointed plate (less) *July 24 1st 2.2*
#17 Hd 1.2 nearly circular, under them long, slight projecting at insertion of antennae, pale brown eyes transverse black. Antennae long slender, black throughout, terminal & smaller with large black tufts. Throat flattened globular, abd. cylindrical subcylindrical as several hairs, subequal, scales post; lateral tufts more than 1 hair. Tube about 4×1 slightly tapering, not fusiform nor concave nearly black. Anal seg. broad winged, infuscated, d. tufts & v. brush normal, moderate comb a plate? (less) body light brown shaded, darkened at sides. Pupa July 27. *transverse* Out July 30 PM 8

8. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000.

Comb a bunch of small teeth more than 1 row. #19 Hd. 8 rounded, nearly circular, rounded narrowed before & wider at antennal insertions, and slender uniform spiculate. Blackish tufts at middle. Body normal brown shaded, head lat. hair single on post seg. tube about $2\frac{1}{2} \times 1$. conic-fusiform, rather thick, infuscated, anal seg. plated on outer $\frac{2}{3}$ the comb & tufts normal moderate. [Another hd. 5, accidentally killed had head flattened, cloudy blackish eyes rounded black scarcely transverse, antennae slender, moderate, infuscated with slight tufts at middle and outer end. Setae. Body normal, lat. hair single post. Comb of fine teeth about 3 rows wide. Tube $2\frac{1}{2} \times 1$ conic-fusiform, all together, of small tufts & more densely placed infuscated with small post. Setae. Anal seg. with small elliptical infuscated dorsal plate and terminal tufts. Setae slender. This pupa hd. 1.3 Antennae white on tufts, the tufts beyond middle almost at terminal $\frac{1}{2}$ end slender and dark. Hd rounded with thin long ends of the transverse black eyes, pale brownish lat. hair single after first 2 abd. segs. Tube thick, rather long, cylindrical, narrowed at top critically, looking a trice fusiform. Comb a patch of fine spines several rows wide small seg. broad weakly plated tufts & brush around black finger rather thick, tapering at tip with visible tracheae. Tube brown infuscated. Prothorax with small dorsal lat. tufts - anero with 3, metas with 4 lat. ones normal. Body transparent, shaded in brown [= #1 = #21?] Pupa July 25 PM. Out July 28

Pupa July 31

#20 July 21 got three more large black tails (=16=17), a pupa and an anopheline in same pool. The comb is a single row of fine long teeth close together & larger centrally forming a tooth-like projection. Anal finger slender & ventral back large tufts slender divaricate. Pupa out III. July 22 two more black tails. Pupa July 28

out VII 22-23 *territans*
#21 (Three gutters) and larva with antennae weakly white banded, tube dark but not black as #16 and much thicker than #5. Like no. 1. Comb several rows wide. VII 22 Anal fingers rather thick, uniform. Post abd. hair long single. Tube moderate, about 3×1 , rather thick, conically tapered at tip. Pupa July 24. Out July 27. *territans*

#22 another large *territans* antennae tufted at outer $\frac{1}{2}$ with a short tip black tube moderate about 3×1 the top conically tapered, dorsal $\frac{2}{3}$ rather thick. All heavily brown shaded, tube light brown not black. Comb with 6 rows. Also 6 anophelines. All small dark sides clear hd. brown black marked with white spots. Pupa July 27. Out July 29 PM. anopheline about July 1

also Anopheles, small

8795/8

#23 stages I, II and III in a dirty road (just) July 25 1902. Stage I has head .35 cent and agrees with description of #4 stage I. Ventral hump represented by a tuft of very weak hair. Antennal tufts slight, a little before middle. Tube colored at base, top with infuscated black ring. The young ones float especially flatly.

Stage II Hd .5 Tube short, moderate fusiform, all black. Hd black, body brown shaded. Like #4 II. ^{section in the clean part}

Stage III Heavy down more straightly in the water. Hd tube pale brown, black only on the upper edge. Comb of 6-10 spines with widened margins. Ant tufts a little before middle of joint. Eye rounded, scarcely transverse. Tube 2x1 slightly fusiform, conic. Anal seg. rather narrowly flattened. Setae 4, tapered. All hair tufts of seg 16 c. darker in 3 than single. Thorax normal. Hump present moderate, remote, spaced nearly their own length. Hd .8 mm

Another Hd 1.2 rounded flattened, pale oblique brown, eye round black, a black line at top of head, antennae slender and rather small, pale at base, tip black, tufts of body normal rather thick, tube about 2x1, conic fusiform pale brown the bases black. Side hair more than 1 whole length than as usual. Anal seg all pale, ringed but not infuscated, tufts black slight. Comb of 10 spines remote in an inflexed tapered whole length rather pointed. al. canal small dark whole hump rather narrowly from the water. Pupa July 29 Out July 30 1902.

First four skins have a first & not contans. 5th sides!! also contans

#24 a lot of terratus in II-III in a grassy marsh (Germainville) 50 feet across with lilies in middle & frogs croaking

#25 Several normal Manotacma sapphirina with the preceding (#24) in II-III, a very long eared pupa and an Anopheles. Pupa chd July 27

#26 Stage I in rock pool mile 12, July 29 1902. Hd rounded, all blackish tufts at middle. Tube large fusiform, clear, tube weakly blackish infuscated in a ring. Anal seg with dorsal blackish plate. Setae 4, stalked tapered with visible tracheae in 8. Hump, hair long, thick, clear, partly brown shaded. Comb pale, obscure, a few teeth on a slightly infuscated area. July 30 12M all white at first but feeding. Hd .5 Tube 3x1 scarcely fusiform, conic tapered, blackish infuscated. Hd rounded eyes 1.5x1.5 slightly convex. Anal seg black. Antennae dark tufts in the middle. Comb slight 14-16 teeth in a patch the central ones smaller.

normal circular flattened, transparent, eyes 1.5x1.5 black. Hd normal. First hair black single. Setae 4, conic, tapered, pale laterals. Anal seg. not much flattened tube dark, small. Eye round, not slightly transverse, as black shade to make them pointed. Body transparent, al. canal darkish pale. Tapered at middle.

Aug 4 Hd 1.2 Rounded elliptical hump thin long, eye black transverse, antennae pale, blackish at tip, tufts at middle. Tube rather thick, slightly conic tapered about 3x1 with a spot behind. Tube brown, anal ring lateral, hairs all pale, al. canal dark brown. Antennal tufts before middle of hump of slenderer, hump, double at tip. Tube 4x2.

Pupa Aug 7 In Aug 9 PM

tapered, roundedly thick, with comb, several denticles. Comb a patch of small spines 5 or 6 wide in center. Anal seg ringed, and hump before the back

of the joint, blackish translucent, a long thin and shorter ones on sides

irregular rows 2 or 3 of the central ones irregular behind the others.

#27 (23) produced Antex cantans and Antex from isolated one Aug 1. Hd 1.2 eyes conic shaped transverse; antennal tufts at middle with trace beyond, blackish at tip, brown gales. Both head and body pale, not dark brown as the first contans were. Tube conic tapered about 2x1 pale laterals. Anal seg pale laterals. Comb visible with denticles, 9 to 10 remote brown tapered teeth. Anal seg with tufts before the end tufts. Pupa Aug 3 Aedes fusca 1.

| | |
|-----|---|
| #28 | Isolated another #23 Aug 1. Pupa Aug 4 Out Aug 7 <u>contans</u> |
| #29 | " " " " Pupa Aug 4 Out Aug 7 <u>contans</u> |
| #30 | " " " " Pupa Aug 2 Out Aug 5 <u>Aedes</u> |
| #31 | " " " " Pupa Aug 4 Out Aug 6 <u>contans</u> |
| #32 | " " " " Pupa Aug 4 Out Aug 7 <u>contans</u> |
| #33 | " " " " Pupa Aug 2 Out Aug 4 <u>Aedes</u> |
| #34 | " " " " Pupa Aug 3 Out Aug 6 <u>contans</u> |
| #35 | " " " " Pupa Aug 3 Out Aug 6 <u>contans</u> |
| #36 | " " " " Pupa Aug 3 Out Aug 7 <u>contans</u> |
| #37 | " " " " Pupa Aug 3 Out Aug 6 <u>Aedes</u> |
| #38 | " " " " Pupa Aug 4 Out Aug 6 <u>contans</u> |

Comb consists of 8 teeth in a slightly irregular row. Tube fusiform 3x1 blackish infuscated middle darker than the distal 1/2. Anal seg with out small fold. Gaster 2.8 d. base (4 anal fingers) #44 Do Aug 4 Pupa Aug 5

anal tufts 2.8 d. base 1/2 inch 1 inch long rather barred area

| | |
|-----|---|
| #39 | Do Aug 5 Pupa Aug 6 (died) |
| #40 | " Aug 4 Pupa Aug 4 Out Aug 6 <u>Aedes</u> |
| #41 | " " Pupa Aug 4 Out Aug 7 <u>contans</u> |
| #42 | " " Pupa Aug 5 |
| #43 | " " Pupa Aug 4 Out Aug 6 <u>Aedes</u> |
| #44 | " " Pupa Aug 4 Out Aug 7 <u>contans</u> |

Gaster 2.8 d. base (4 anal fingers) #44 Do Aug 4 Pupa Aug 5 2 mm, body brown, 3 feet 2-3 feet long, smaller. Antennae blackish, tufts at middle, brush like

